44614

# ENGLISH BOTANY;

OR,

## COLOURED FIGURES

OF

# BRITISH PLANTS,

WITH THEIR

## ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF GROWTH:

TO WHICH WILL BE ADDED,

## OCCASIONAL REMARKS.

BY

*JAMES EDWARD SMITH, M.D. F.R.S.*

MEMBER OF THE IMP. ACAD. NATURÆ CURIOSORUM, THE ACADEMIES OF STOCKHOLM, UPSAL, TURIN, LISBON, LUND, BERLIN, PHILADELPHIA, AND THE NAT. HIST. SOCIETIES OF PARIS AND MOSCOW;

PRESIDENT OF THE LINNÆAN SOCIETY.

THE FIGURES BY

JAMES SOWERBY, F.L.S.

——"VIRESQUE ACQUIRIT EUNDO."——*Virg.*

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MDCCCXII.

G.R. III.

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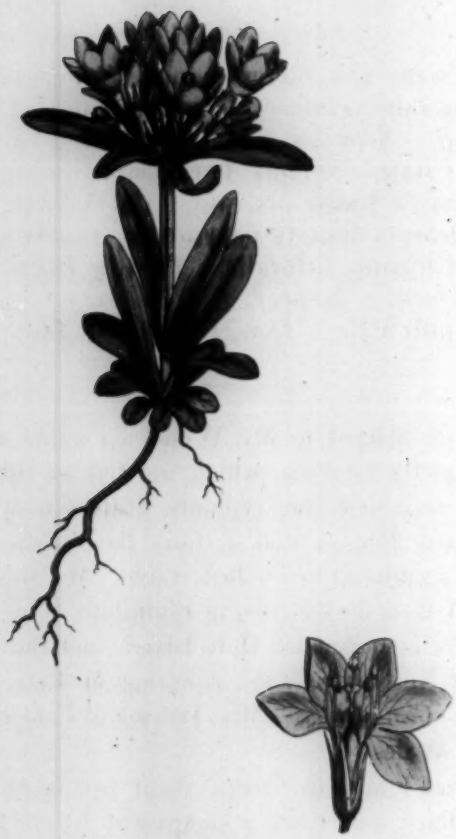


# CHIRONIA littoralis.

## *Dwarf Tufted Centaury.*

*PENTANDRIA Monogynia.*

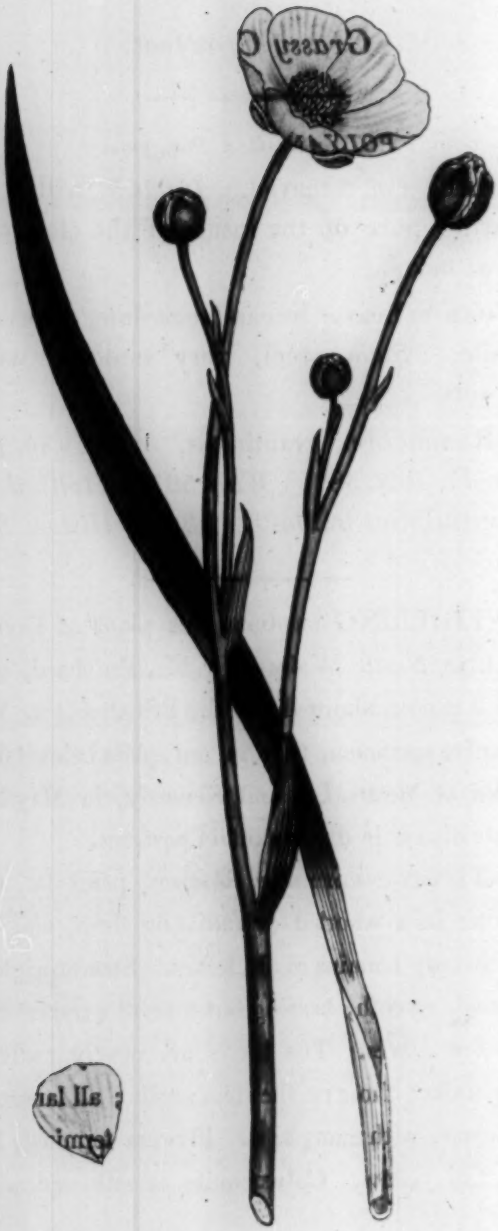
GEN. CHAR. *Cor.* salver-shaped. *Stamens* inserted into the tube. *Anthers* becoming spiral. *Style* declining. *Seed-vessel* of two inflexed valves.

SPEC. CHAR. Stems herbaceous, simple, straight. Leaves linear-obovate. Calyx-teeth awlshaped. Flowers densely corymbose, nearly sessile.

SYN. Chironia littoralis. *Turn. & Dillw. Guide*, 469. *Winch. v.* 2. *pref.* 3.
Ch. pulchella. *Don. Herb. Brit. fasc.* 1. 7.

WE are obliged to Mr. Winch for a fresh wild specimen of this pretty *Chironia*, which we find no difficulty in admitting as a new one, certainly distinct from those in our *t.* 417 and 458, as well as from the varieties, or possibly species, mentioned in *Fl. Brit.* 1393. Mr. Brodie of Brodie observed it on the sea coast in Elginshire, near his residence. It is very abundant on Holy Island, and the neighbouring coast of Northumberland, flowering in June, much earlier than *Ch. Centaurium*. Mrs. Dowson of Geldeston brought it us from Wales.

The root is annual. Stems about two inches high, generally solitary, sometimes accompanied by one or two smaller ones, all stiff and straight, leafy at the top and bottom only. Leaves obovate, narrow, obscurely three-nerved, nearly uniform. Flowers large and handsome, with obtuse segments, numerous, almost sessile, in a very dense forked corymbus. Mr. Turner observes that the comparative proportions of the calyx and tube of the corolla vary. The style is scarcely declined in this species, though it is so in *pulchella*. The anthers are twisted when old or dry.



Published by Jas. Sowerby London

# RANUNCULUS gramineus.

## *Grassy Crowfoot.*

*POLYANDRIA Polygynia.*

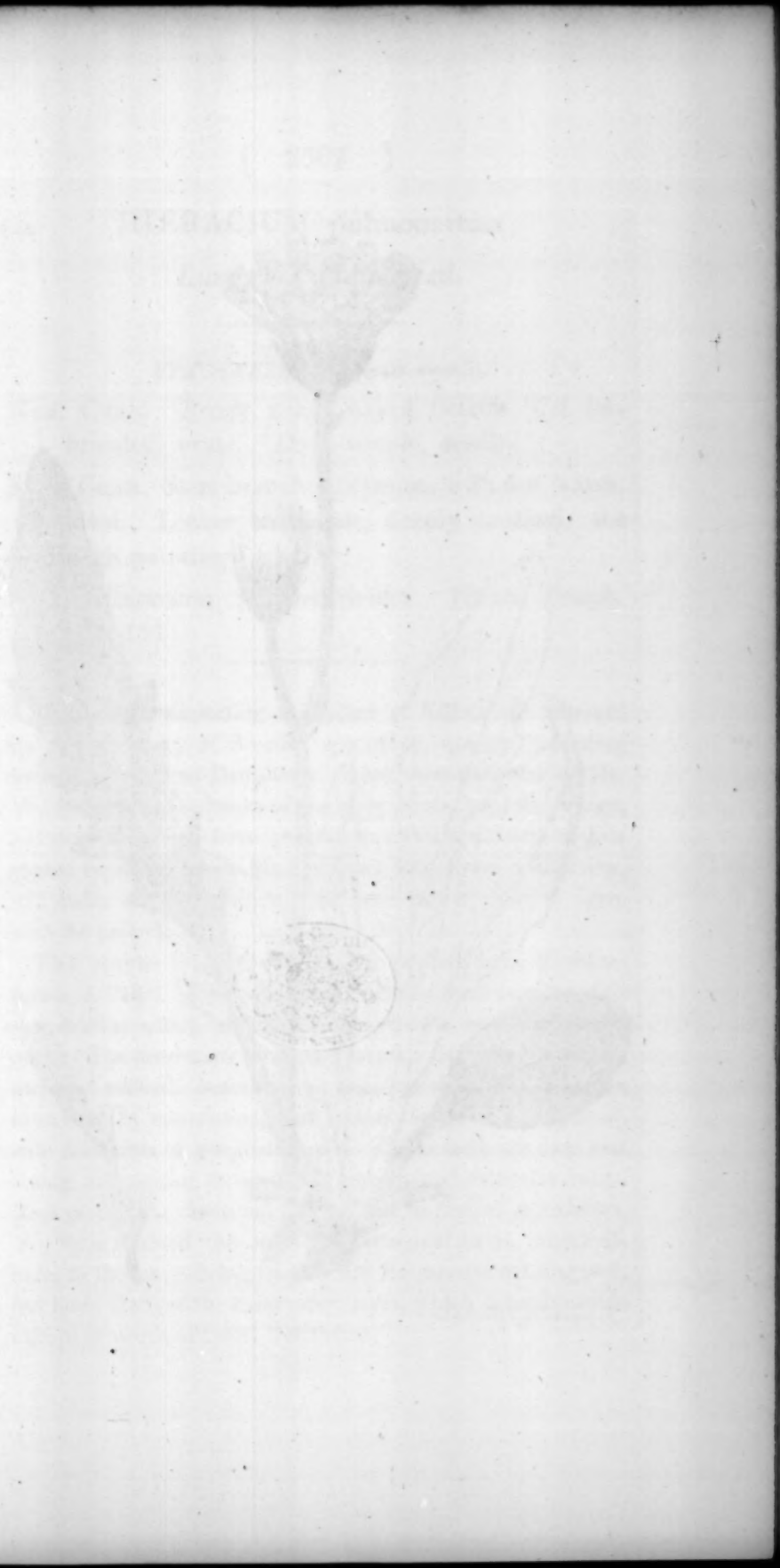
GEN. CHAR. *Cal.* 5-leaved. *Petals* 5, with a honey-bearing pore on the inside of the claw of each. *Seeds* naked.

SPEC. CHAR. Leaves linear-lanceolate, many-ribbed, sessile. Stem erect, very smooth, with few flowers.

SYN. Ranunculus gramineus. *Linn. Sp. Pl.* 773. *Sm. Fl. Brit.* 588. *With.* 505. *Hull. ed.* 2. 164. R. angustifolius bulbosus. *Bauh. Hist. v.* 3. 850.

DR. WITHERING mentions this plant as having been brought from North Wales by a Mr. Pritchard, on which authority it is now admitted into the British *Flora*. We have seen no native specimen, that in our plate being taken from the garden of Messrs. Lee and Kennedy, in May last. Its natural situation is in dry mountain pastures.

The root is bulbous or rather tuberous, perennial, throwing out its fibres in a whorled or radiating form, and crowned with the thready remains of old leaves. Stem upright, a foot high, round, smooth, bearing but a small number of flowers, and very few leaves. The leaves are mostly radical, with sheathing stalks; those on the stem sessile; all lanceolate, entire, glaucous, with many ribs. Flowers terminal, large, of a bright full yellow. Calyx quite smooth, spreading, not deflexed.



July 1 1805 published by J.C. Sowerby London

# HIERACIUM pulmonarium,

## *Lungwort Hawkweed.*

*SYNGENESIA Polygamia-æqualis.*

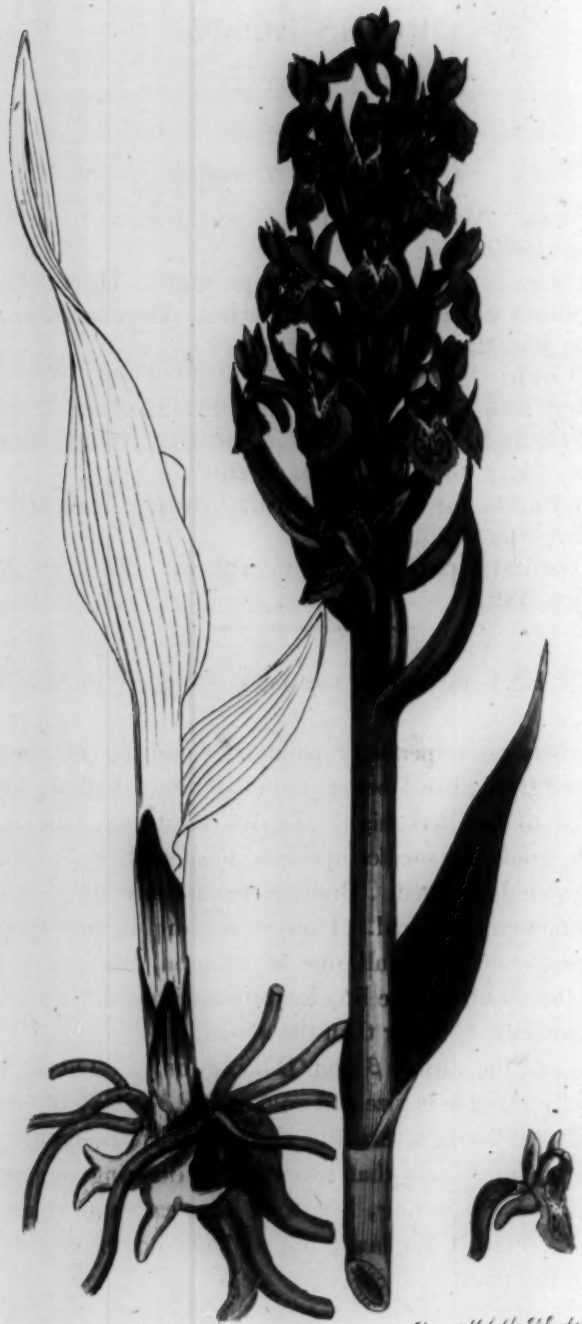
GEN. CHAR. *Recept.* nearly naked, dotted. *Cal.* imbricated, ovate. *Down* simple, sessile.

SPEC. CHAR. Stem branched, cymose, with few leaves, solid. Leaves lanceolate, deeply toothed, the teeth pointing forward.

SYN. Hieracium pulmonarioides. *Villars. Dauph. v.* 3. 133.

OUR doubts respecting this plant of Villars are removed by the discovery of Scottish specimens, exactly according with his own from Dauphiny. These were gathered by Mr. W. Borrer, on the banks of the river Nivis, near the bridge, last summer. We have several unsettled specimens of this genus, especially from Mr. G. Don, both dried and living, still under our observation, but none that appears to agree with the present.

This species is satisfactorily distinguished from *H. maculatum*, *t.* 2121, by its solid stem, and the small number of its stem-leaves, which are mostly one or two, near the bottom only. The flowers are fewer and larger. Radical leaves numerous, stalked, lanceolate or slightly elliptical, narrower than those of *maculatum*, and rather clouded than spotted, with faint tints of purplish brown. Their teeth are deep and strong, all pointing forward; the margins and footstalks hairy. Root perennial. Stem not half so tall as that of *maculatum*. We have retained the sense of the original name, which alludes to the leaves being spotted like *Pulmonaria* orLungwort, but have changed the termination *oides*, which is inadmissible except in words of Greek derivation.



July 1 1811 published by Jas Sowerby London

# ORCHIS latifolia.

## *Marsh Orchis.*

*GYNANDRIA Monandria.*

GEN. CHAR. *Nectary* a spur behind the flower. *Anther* parallel to the style.

SPEC. CHAR. Bulbs somewhat palmate. Horn of the nectary conical: lip three-cleft. Bracteas double the length of the flowers.

SYN. Orchis latifolia. *Linn. Sp. Pl.* 1334. *Sm. Fl. Brit.* 924. *Huds.* 385. *With.* 26. *Hull. ed.* 2. 253. *Relh.* 334. *Sibth.* 11. *Abbot.* 192. *Curt. Lond. fasc.* 5. *t.* 65. *Fl. Dan. t.* 266.

O. palmata pratensis latifolia, longis calcaribus. *Raii Syn.* 380.

β. O. palmata palustris, tota rubra. *Dill. in Raii Syn.* 382.

FREQUENT in marshy meadows, flowering in May and June.

The roots are imperfectly palmate, consisting of unequal awlshaped straightish lobes or portions. Stem hollow, leafy, from one to two feet high. Leaves sheathing, lanceolate, broadish, gradually smaller upwards, unspotted. Spike dense, many-flowered, pointed. Bracteas remarkably long, erect, leafy, sometimes coloured. Flowers varying in hue from a pale flesh-colour to a full rose or crimson, the side petals dotted, the middle of the lip elegantly variegated. Spur deflexed, somewhat shorter than the germen.

We adopt the variety β from Dillenius only. This species is certainly variable in size and colour, and, as Ray observes, is described in books several times over. It has been thought by some of our friends that two species, differing somewhat in their times of flowering, length of bracteas, and colour of the corolla, exist in England, but we have not been able to ascertain this point.

Jno. Curtis published by Jo. Saunders London

# CONFERVA implexa.

## *Entangled Conferva.*

*CRYPTOGAMIA Algæ.*

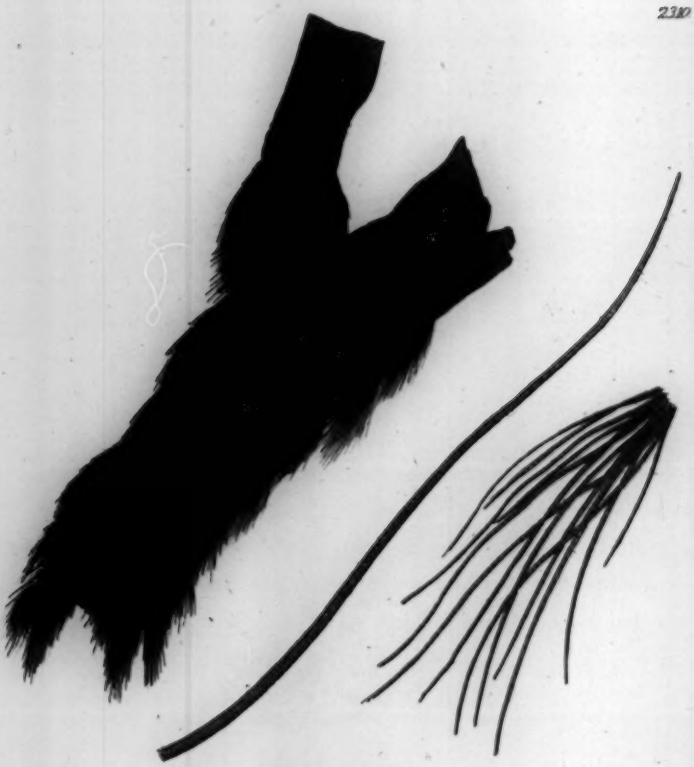
GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Dark green. Filaments unbranched, even, entangled and curled, slender and soft. Joints even, nearly twice as long as broad.

SYN. Conferva implexa. *Dillw. Syn.* 46. *t.* B.

FIRST observed by Miss Hutchins, on rocks in the sea near Bantry. Our specimens were found by Mr. W. Borrer at Southwick, Sussex, in June 1811, composing a dense mat on the ground, in wet places, occasionally overflowed with brackish water.

The colour is a full dark green, fading somewhat in drying; the substance always soft and rather silky to the touch. The threads are variously curled and entangled, yet not rigid. Their dimensions are uniform and even. The joints about twice as long as broad, or something less, full of green matter, except at the very extremities and edges, which, as usual, are either originally white and pellucid, or speedily become so after gathering.



May 1st 1820 published by J. & A. Arch, Cornhill London.

# CONFERVA flaccida.

## *Rusty Flaccid Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Rusty olive. Filaments unbranched, tapering, clustered, short, flaccid. Upper joints as long as broad; lower half as long.

SYN. Conferva flaccida. *Dillw. Syn.* 53. *t.* C.

FOUND by Miss Hill on the Devonshire coast, growing parasitically on *Fucus fibrosus*. Our specimens, gathered by Mr. W. Borrer, last May, in Shoreham harbour, Sussex, grew, in like manner, on *F. vesiculosus*.

The plant to which this *Conferva* is attached, seems clothed with a soft tufted shaggy coat, each tuft, scarcely an inch long, consisting of numerous, olive-brown, flexible, very slender filaments, gently tapering from their base to a fine point. Mr. Dillwyn observed the substance to be in some degree gelatinous, adhering, though not very firmly, to either glass or paper as it dries. The joints in the lower part of each filament are about half as long as broad, the upper ones, indeed three fourths of the whole number, about twice as long.

Hooker, sculp. Published by Baldwin & Cradock, London.

# CONFERVA scutulata.

## *Target Conferva.*

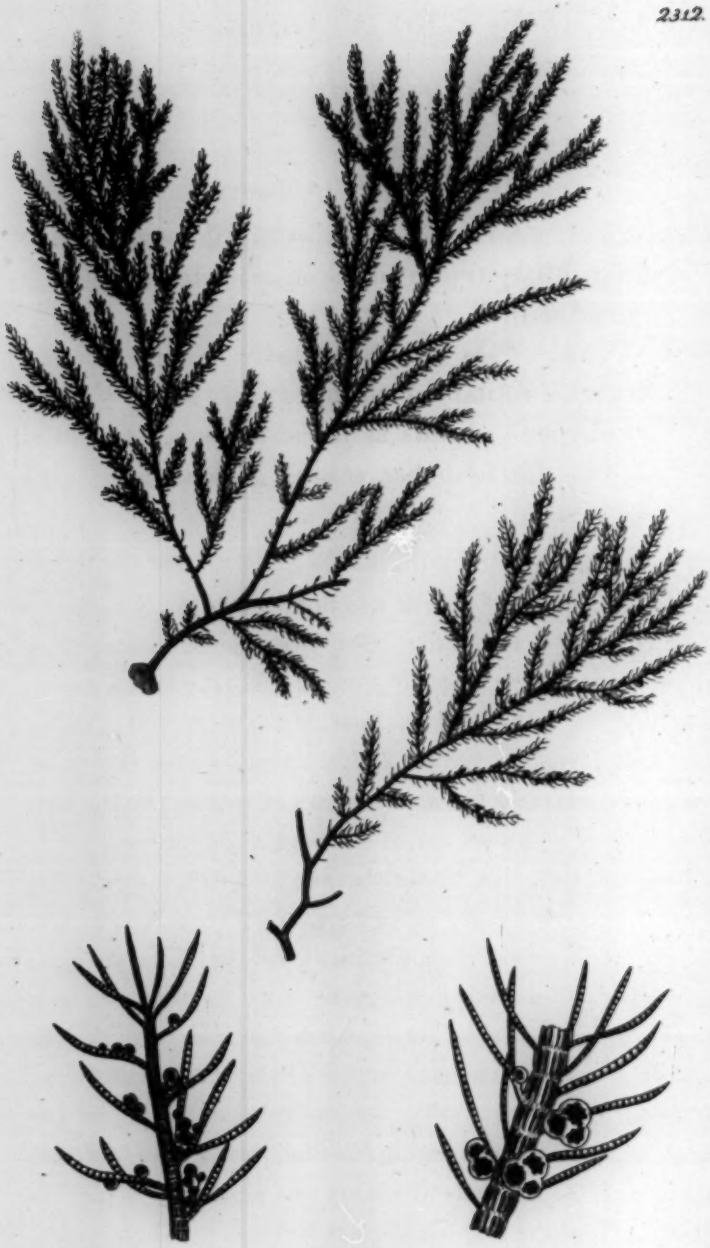
*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Olive brown. Filaments branched at the base, densely combined into a depressed peltate mass, rooted in the centre. Joints as broad as long.

FOR this new and very curious *Conferva* we are indebted to Mr. W. Borrer, who found it, growing parasitically upon *Fucus loreus*, on the beach at Brighthelmston and Shoreham, Sussex, in June 1811. Miss Hutchins however, as we understand, had previously sent specimens and drawings of the same species, from the Irish coast.

The *Fucus* is generally distorted at each spot where it nourishes one of these singular parasites, whose aggregate root is central and strong, deeply penetrating into the substance of the plant that bears it, and much resembles that of an umbilicated Lichen or *Gyrophora*. In like manner the under side of the aggregate shield-like mass of the *Conferva* is all, except the centre, unconnected with the *Fucus*. The upper side is shaggy with the prominent, elongated, terminations of the individual plants of *Conferva*, whose lower parts, bearing many short blunt simple branches, are compacted into a dense, viscid, pale, apparently homogeneous, mass. The joints throughout seem to be about as broad as long.



Mayes imp. published by Jos. Swan & Son London

# CONFERVA Griffithsiana.

## *Aggregate-fruited Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Pale red, repeatedly branched: little branches solitary or clustered, very short, simple, awlshaped. Joints as broad as long. Capsules on the little branches, sessile, globose, sometimes aggregate.

THIS nondescript *Conferva* was first sent to Mr. Sowerby by Miss Biddulph, in March 1800, from Southampton, since which time we have repeatedly received it, later in the season, from that lady, as well as from Mr. Turner; who, as we have called another species *Biddulphiana*, wishes this to be dedicated to another eminent observer of marine plants, Mrs. Griffiths; to which we cannot but most readily agree.

The plant before us, one of the branched, red, marine tribe, grows from a small disk, to the height of three or four inches. The numerous ultimate branches, scattered copiously along the main ones, either solitary or two or three together, are awl-shaped, simple, uniform, not a quarter of an inch long, thickly jointed. Many of them bear, near the base, small sessile round capsules, whitish externally, but enclosing a darkish-red nodule. On some plants the capsules are joined three together, and in such the red seeds within are seen separate and very distinctly. In decay the whole plant becomes of a light green. By drying it changes to a darker or brownish green.

Aug 1 1820 published by J. & C. Sowerby London

# OENANTHE crocata.

## *Hemlock Water Dropwort.*

*PENTANDRIA Digynia.*

GEN. CHAR. *Flowers* irregular: those of the disk sessile and abortive. *Fruit* crowned with the calyx and styles; its bark corky.

SPEC. CHAR. All the leaflets wedge-shaped, cut, nearly equal.

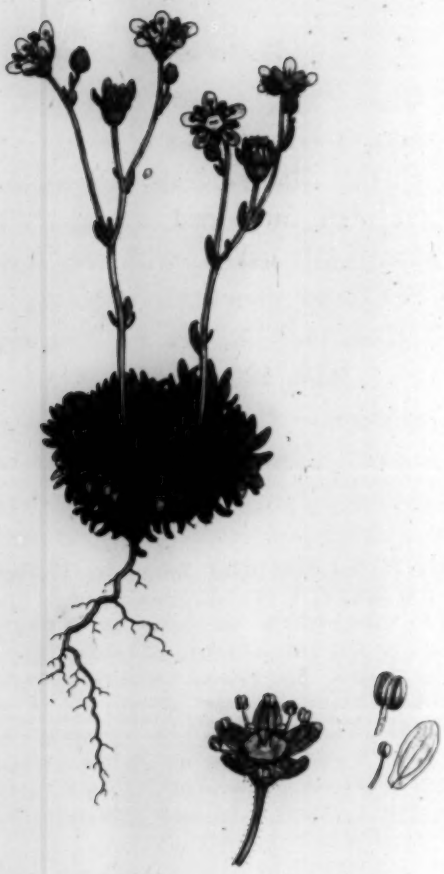
SYN. Oenanthe crocata. *Linn. Sp. Pl.* 365. *Sm. Fl. Brit.* 319. *Huds.* 121. *With.* 302. *Hull. ed.* 2. 83. *Sibth.* 99. *Jacq. Hort. Vind. v.* 3. 32. *t.* 55. *Woodv. Suppl. t.* 267.

Oe. cicutæ facie Lobelii. *Raii Syn.* 210.

HAPPILY this very noxious plant is of rare occurrence. We received specimens from Mr. W. Borrer. It grows in watery situations about the brinks of great rivers, as the Thames, and others, flowering in July.

The root is perennial, composed of numerous ovate fleshy knobs, whose juice is peculiarly virulent. The stems are from two to five feet high, erect, branched, leafy, round, furrowed. Leaves dark green, bipinnate; their leaflets all nearly similar, mostly opposite, sessile, wedge-shaped or somewhat deltoid, more or less cut, veiny, smooth. Umbels terminal, large, convex, of many general and partial rays. General and partial involucrum various in form; sometimes linear and undivided; often dilated and leafy. Flowers white, often with purplish styles and anthers, slightly radiant. Calyx incurved. Fruit oblong, crowned with the erect permanent styles.

The whole herb contains a fetid yellow juice, and is very poisonous. Ehret found a giddiness affect him while drawing it. Sir Thomas Frankland has known brood mares sometimes to eat the root, and to die in consequence.



Aug 1 1 as published by J.C. Sowerby London

# SAXIFRAGA moschata.

## *Musky Alpine Saxifrage.*

*DECANDRIA Digynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds*.

SPEC. CHAR. Radical leaves aggregate, thin, linear-lanceolate, undivided or three-cleft, triple-ribbed. Stem nearly naked, with very few flowers.

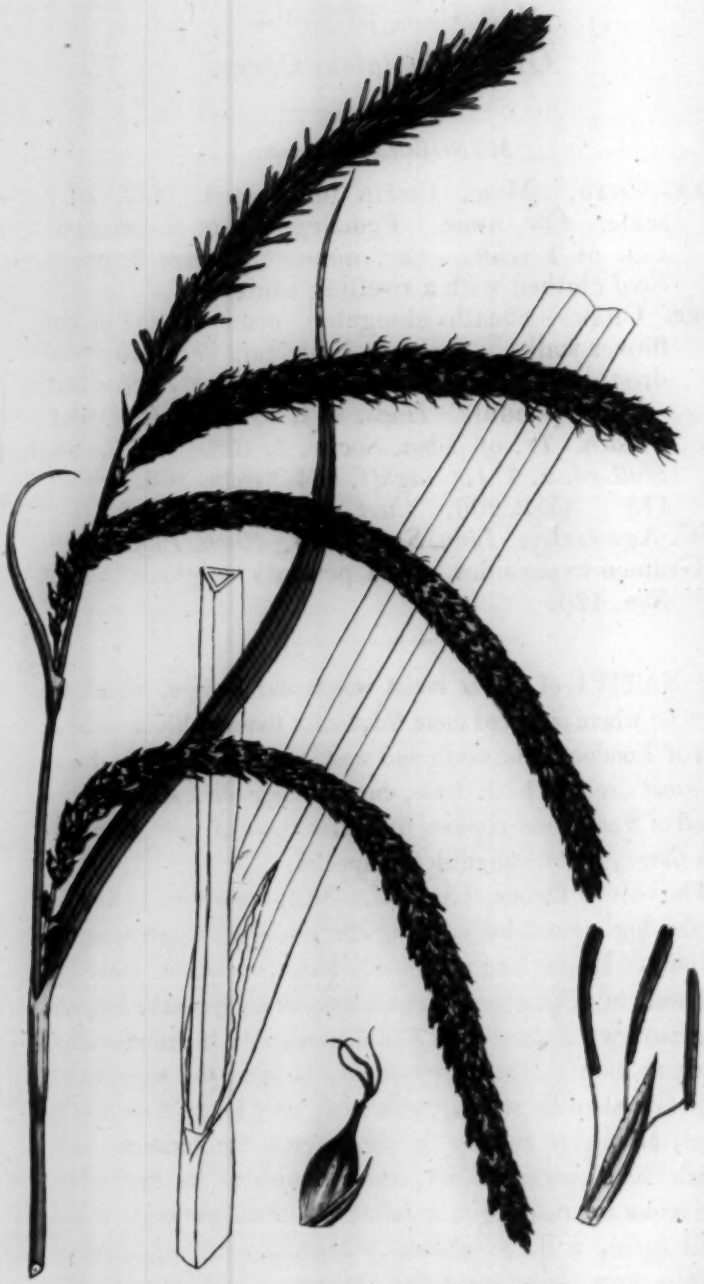
SYN. Saxifraga moschata. *Murray in Linn. Syst. Veg. ed.* 14. 414. *Sm. Fl. Brit.* 455. *Hull. ed.* 2. 124. *With.* 406.

S. cæspitosa. *Huds.* 181?

S. n. 985. *Hall. Hist. v.* 1. 421.

WHETHER the plant found by Hudson on mountains above Ambleside, Westmoreland, (which spot we have examined in vain,) be the *moschata*, as Withering supposed, or not, we are now authorized in admitting this curious species as a British native, Mr. Don of Cambridge having given us specimens from his garden, the parent roots of which he received from the Highlands of Scotland. Jacquin's figure, *Misc. v.* 2. *t.* 21. *f.* 1, is so bad, that we decline quoting it, rather supposing it to represent one of several exotic species known to us, but hitherto not well explained in books. Neither is Haller's plate, *It. Helvet. t.* 1, very good.

This little species forms perennial tufts, and flowers in May or June. The whole herb is glutinous, and has an aromatic musky smell in warm weather. The leaves are much thinner than those of *S. cæspitosa*, *t.* 794, generally undivided, a few of them sometimes three-cleft; the main rib of each sending off, beyond its middle, two lateral ribs. The stems are about two inches high, bearing but few leaves, and from two to five flowers, whose germen is inferior, and whose petals, stamens, and styles are buff-coloured, with a reddish tinge. The petals are nearly obovate, three-ribbed above their base.



Aug 1 1 1 published by J.C. Loudon, London

# CAREX pendula.

## *Great Pendulous Carex.*

*MONOECIA Triandria.*

GEN. CHAR. Male, *Catkin* imbricated. *Cal.* of 1 scale. *Cor.* none. Female, *Catkin* imbricated. *Cal.* of 1 scale. *Cor.* none. *Stigmas* 2 or 3. *Seed* clothed with a swelling tunic.

SPEC. CHAR. Sheaths elongated, nearly equal to the flower-stalks. Spikes cylindrical, very long and drooping. Fruit ovate, acute, closely crowded.

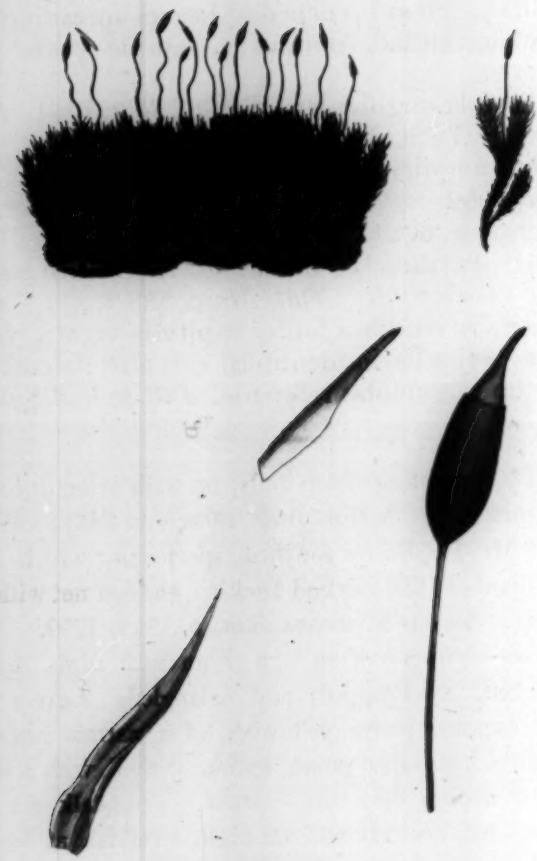
SYN. Carex pendula. *Huds.* 411. *Sm. Fl. Brit.* 981. *Gooden. Tr. of Linn. Soc. v.* 2. 168. *With.* 96. *Hull. ed.* 2. 271. *Lightf.* 564. *Relh.* 366. *Sibth.* 413. *Abbot.* 206. *Curt. Lond. fasc.* 3. *t.* 63.

C. Agastachys. *Linn. Suppl.* 414. *Ehrh. Phyt. n.* 19. Gramen cyperoides, spicâ pendulâ longiore. *Raii Syn.* 420.

A NATIVE of rather moist woods and hedges, which we have no where observed more frequently than within a mile or two of London to the north and west, flowering early in June. Its great size, and long, dense, curved, dependent spikes, composed of vastly more copious fruit than those of any other British *Carex*, well distinguish this species.

The root is fibrous, perennial. Stem from three to five or six feet high, erect, leafy, triangular, its edges rough near the top only. Leaves long and broad, harsh, rough at the edge and keel, of a full green, rather glaucous underneath. Stipula long, narrow and sheathing. Floral leaves with tubular sheaths, nearly as long as the flower-stalks, at least the lower ones. Spikes on shortish stalks, cylindrical, very long, from five to seven, all nearly entirely female, except the terminal one, which also sometimes bears female flowers at its extremity. The scales are rusty, with a pale keel. Anthers long, rusty. Fruit green, a little inflated, triangular, pointed, smooth. Stigmas three. Seed triangular, brown.

2310.



Engraved published by J. & J. Sowerby London

# TORTULA unguiculata.

*Bird's-claw Screw-moss.*

*CRYPTOGAMIA Musci.*

GEN. CHAR. *Fringe* simple, of numerous capillary teeth, spirally and repeatedly twisted together.

SPEC. CHAR. Stem branched. Leaves spreading, lanceolate, keeled, pointed. Capsule ovate. Lid curved.

SYN. Tortula unguiculata. *Sm. Fl. Brit.* 1251. *Sibth.* 285 ? *Turn. Musc. Hib.* 47.

Bryum unguiculatum. *Huds.* 482. *With.* 830. *Hull.* 262. *Relh.* 426 ? *Abbot.* 242. *Dicks. H. Sicc. fasc.* 6. 21.

B. unguiculatum et barbatum, surculis in summitate crassioribus. *Dill. Musc.* 383. *t.* 48. *f.* 47.

B. angustis viridibus foliis, capitulis erectis, brevibus pediculis insidentibus, calyptrâ falcatâ, vel avium unguiculas referente. *Dill. in Raii Syn.* 96.

FOUND, composing dense tufts, on walls or on dry sandy ground, producing its fruit from March to May. We are obliged to Mr. W. Borrer for these specimens, which agree with the plant of Dillenius and Dickson, though not with that of Hedwig. See our *T. mucronulata*, *v.* 19. *t.* 1299.

The stems are from half an inch to an inch high, more or less branched, level-topped, and entangled. Leaves deep green, in exposed places yellowish, of a narrow lanceolate form, with a long taper point, entire, keeled, with a strong midrib; by drying they turn inward. Fruitstalk not quite erect, deep red, scarcely an inch high, terminal, at least till the lateral branches overtop it. Capsule erect, ovate, not cylindrical, smooth, brown. Lid half as long, reddish, awl-shaped, incurved. Veil with a brown point, soon incurved in its position from the swelling of the fruit, and compared by Dillenius to a bird's claw.

# LICHEN verruculosus.

## *White-warted Black Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust indeterminate, very thin, fibrous, black, with white, convex, crowded, smooth warts. Shields solitary in each wart, depressed, coal-black, with a border of the same colour.

SENT from the western part of the county of Durham, by Mr. Winch, who on comparing it with the authentic *L. atro-albus* from Dr. Swartz, judged them to be the same, an opinion which we, at first, did not hesitate to adopt. But on a more critical examination of various fine specimens from Dr. Swartz, as well as from Dr. Acharius himself, we have come to a contrary conclusion. Their plant, well figured, though without shields, by Wulfen, in Jacq. Coll. v. 2. t. 14. f. 1, (not f. 4,) bears on its black crust copious roughish grey or brownish warts, and the shields are, as Acharius justly describes them, intermixed therewith. Ours nearly indeed agrees with that in its crust, which forms small indeterminate patches on the uneven surfaces of the hardest rocks, and is extremely thin, black, fibrous about the edges, inseparable from the stone; but its warts are cream-coloured, smooth, less prominent or convex, each bearing one, rarely more than one, central, small, very black, depressed, flattish, shield, whose slightly elevated border is of the colour and substance of the disk. This difference in the origin and situation of the shields is certainly essential. *L. verruculosus* is allied to those in v. 26. t. 1829—31. We find nothing in Acharius to which it can be referred, except possibly his *Lecidea atro-virens* β, *gerontica*, which we have never seen; but the characters accord imperfectly, and we are very sure our plant can have nothing to do with *atro-virens*.

2318.

May 1, 1814, published by Jas Sowerby London.

# LICHEN pubescens.

## *Black Tufted Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, much branched, decumbent, entangled, round, rough, olive black. Shields concave, reddish brown, or blackish, with a margin of their own substance and colour.

SYN. Lichen pubescens. *Linn. Sp. Pl.* 1623. *Fl. Suec. ed.* 2. 426. *Ach. Prodr.* 217.
L. scaber. *Huds.* 562, 661.
L. exilis. *Lightf.* 894. *With. v.* 4. 47. *Hull.* 306.
L. intricatus. *Ehrh. Crypt.* 80.
Cornicularia pubescens. *Ach. Meth.* 305.
Conferva atro-virens. *Dillw. Conf. t.* 25. *& t.* D. *Syn.* 60. *Pref.* 5.

WE have gathered this on Ben Lomond, as well as in Cardiganshire. It always grows, as Acharius well observes, on wet or dripping rocks, not, like most of its tribe, in dry open spots. The shields, a very great botanical rarity, have obligingly been lent us by the Rev. H. Davies, who gathered them in company with Mr. Hudson, and who confirms the synonym of that author, as the Linnæan herbarium establishes that of Linnæus. Dillenius seems to have been unacquainted with this *Lichen*, according to Mr. Davies, whose paper on this, and several species near it, will appear in the 11th vol. of the Linn. Soc. Transactions, and who has examined his herbarium.

This is much smaller than any British *Lichen* of the same sort, and grows decumbent, in dense entangled patches, of an olive black with some polish. Its numerous branches are rough with minute points, their ends acute. Shields lateral, sessile, scattered, small; when young concave, bright reddish brown, semitransparent, with a smooth margin of their own substance and colour; by age they become darker and flatter, and the margin rather uneven.

Lymn. published by J.ª Sowerby, London

# CONFERVA siliculosa.

## *Small-podded Conferva.*

*CRYPTOGAMIA Algæ.*

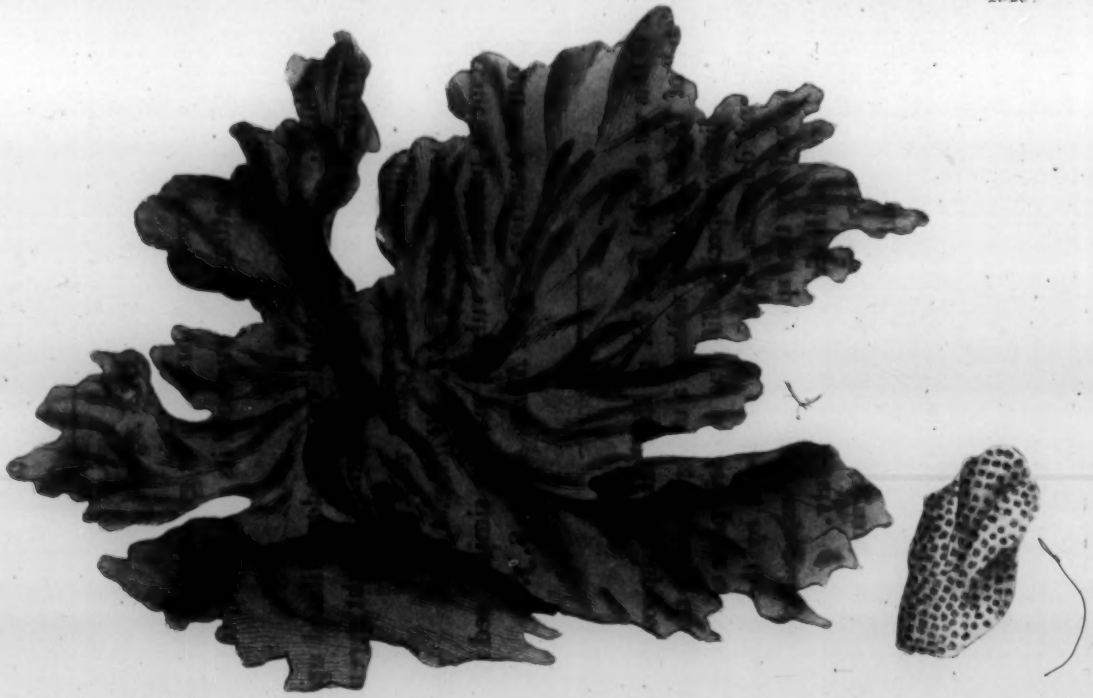
GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. "Yellowish brown, very much branched, slender, all the branches generally alternate, and pointed. Joints about as broad as long. Capsules pod-shaped."

SYN. Conferva siliculosa. *Dillw. Syn. n.* 112. *t.* E.
Ceramium confervoides. *Roth. Catal. v.* 1. 151. *t.* 8. *f.* 3. *v.* 3. 148.

GATHERED by Mr. W. Borrer, in May last, upon timber in the sea at Brighthelmston.

Even Mr. Dillwyn doubts whether this be a distinct species from *C. littoralis*, *t.* 2290, though on account of the opinion of Mr. Hooker, as well as of Dr. Roth in the 3d vol. of his *Catalecta*, he has admitted it into his list, and that our work may not be defective as to any British plant, we follow his example, and take advantage of his specific character.—The branches seem to want that twisted appearance observable in *littoralis*, nor do their points project in a spreading manner; but the chief difference, it seems, lies in the fruit, which in the present case consists of stalked lanceolate pods, not of globular sessile capsules. We find these supposed pods very thickly jointed, at least in appearance;—may they prove in reality young branches? Whether they be so or not, the occurrence of two different shapes of fruit in some other *Confervæ*, as indicated by Mr. Dillwyn, makes us the more doubtful concerning this.



W. Jo. Hooker, London

# ULVA bullosa.

## *Cellular Green Laver.*

*CRYPTOGAMIA Algæ.*

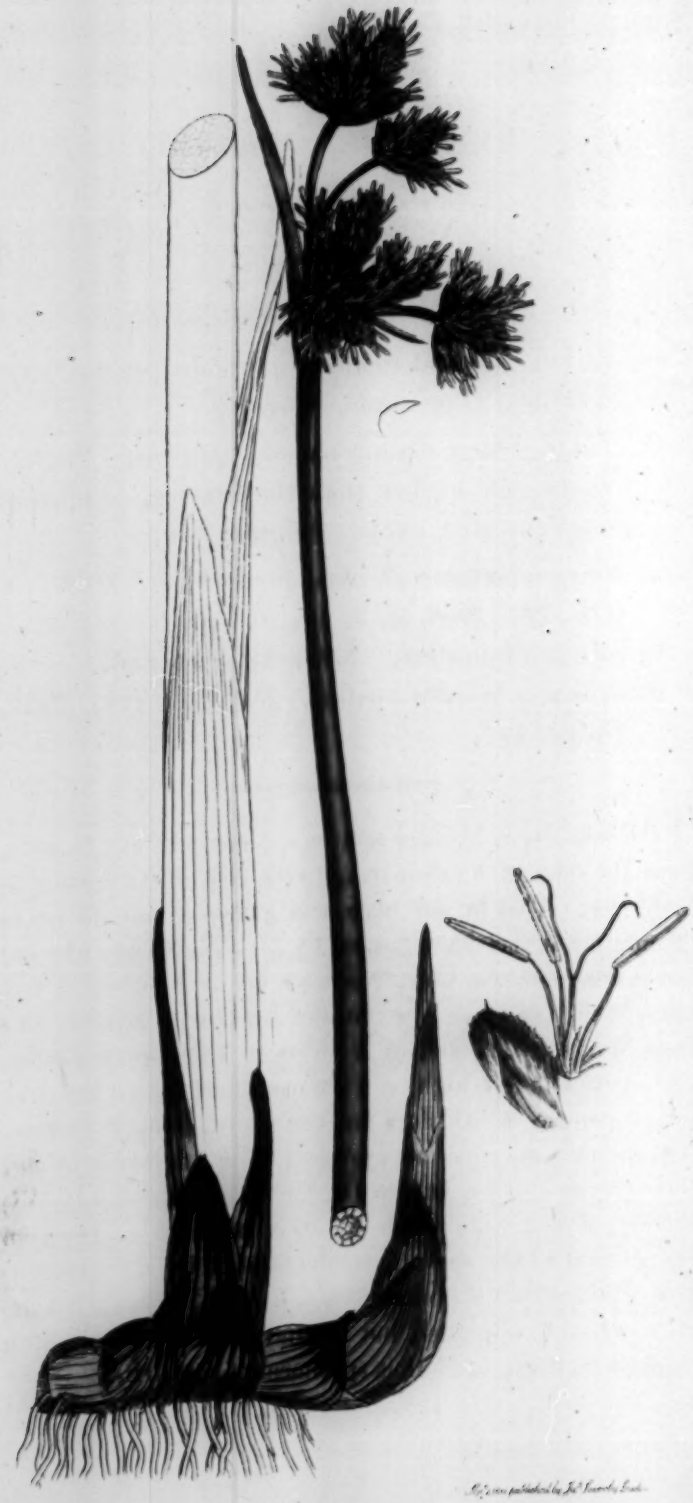
GEN. CHAR. *Frond* membranous or gelatinous. *Seeds* solitary, scattered throughout its substance, under the cuticle.

SPEC. CHAR. Membranous, very tender, dilated upwards, variously sinuated, cellular, bright green.

SYN. Ulva bullosa. *Roth. Catal. v.* 3. 329.
U. Lactuca β. *Huds.* 567. *With. v.* 4. 123.
Tremella palustris, vulgari marinæ similis, sed minor et tenerior. *Dill. Musc.* 44. *t.* 8. *f.* 2.

To this we alluded in v. 22. p. 1551, as a "supposed variety" of *U. Lactuca*, not without a strong suspicion that they must be distinct species, differing in their place of growth, texture and duration, which is confirmed by the opinion of Roth, and by the specimens before us, collected by Mr. W. Borrer at Henfield, Sussex, last July.

Dillenius observed this plant in shallow stagnant waters, "in the meadows behind Newington," chiefly in the spring, and remarks that as the warm weather came on, it floated on the top, turned yellowish, and became full of air-bubbles as if in a state of fermentation. The whole is of a smaller size than *U. Lactuca*, *t.* 1551, much more slippery and slimy, scarcely bearing to be touched without breaking and spoiling. The shape is various and uncertain. When at maturity the frond becomes cellular, somewhat like a cabbage-leaf. Under a microscope it appears beautifully dotted, as if reticulated.



Pl. 2321 published by Jos. Swan & Son

# SCIRPUS glaucus.

## *Glaucous Club-rush.*

*TRIANDRIA Monogynia.*

GEN. CHAR. *Glumes* chaffy, imbricated every way, all fertile. *Cor.* none. *Seed* 1.

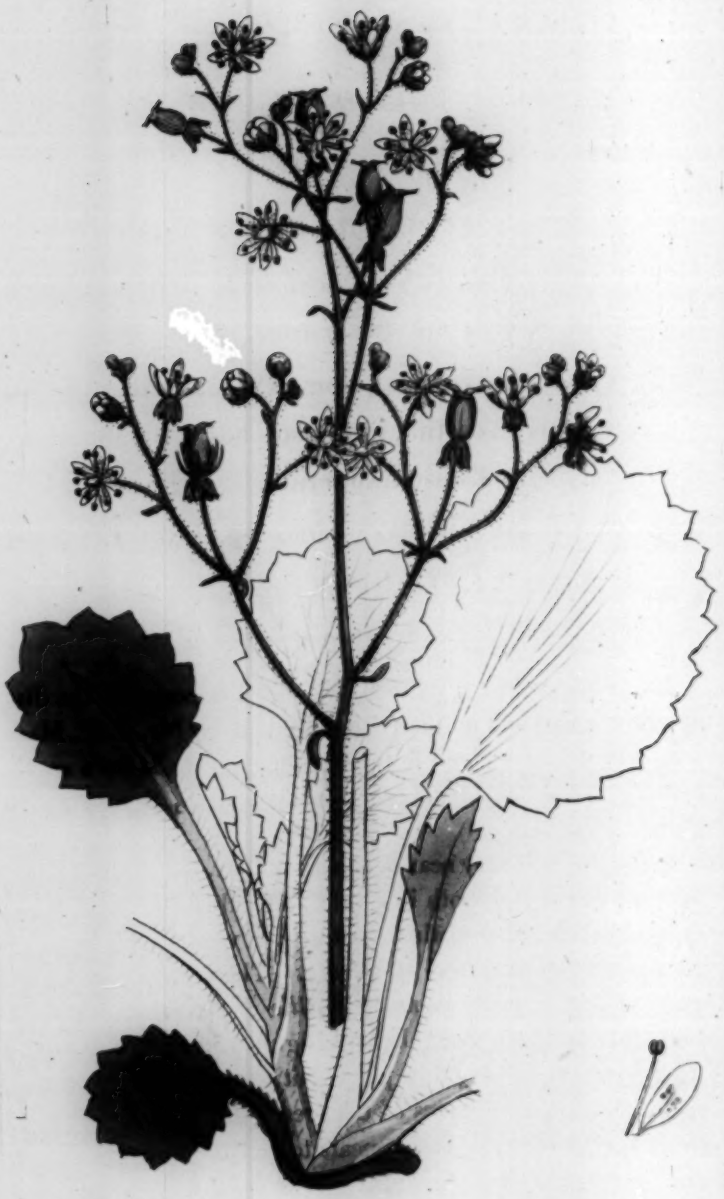
SPEC. CHAR. Stem round, naked, glaucous. Panicle cymose, not higher than the bractea. Spikelets conglomerated, ovate. Stigmas two.

SYN. Scirpus lacustris β. *Sm. Fl. Brit.* 52. *Huds.* 19. *With.* 75. *Hull. ed.* 2. 17.

S. palustris humilior. *Scheuchz. Agr.* 356.

Juncus sive Scirpus medius. *Raii Syn.* 428. *Bauh. Theatr.* 181.

THE late Mr. J. Mackay sent us specimens of this in 1800, from the sides of a salt-marsh, to the west of Ardbigland in Galloway. That in our plate was gathered near ditches in the marshes at Shoreham, Sussex, by Mr. W. Borrer, who has found the same near Cley, Norfolk; nor is it indeed a rare plant in such places. We do not hesitate to separate this from *S. lacustris*, *t.* 666, as it differs in being much smaller, (not above two feet high) of a glaucous hue, with a less compound panicle, which does not rise above the upper bractea. The spikelets moreover are crowded, ovate, darker in colour, their glumes broader, and, as Dr. Stokes well observes in Withering, dotted with purple in their paler part. The stem being round all the way up, besides most of the above characters, distinguishes it from *carinatus*, *t.* 1983. The stigmas are only two, as in this latter, but we find some flowers with two, others with three, in Norfolk specimens of *lacustris*.



Sept. 1 1811 published by J.B. Sowerby London

# SAXIFRAGA hirsuta.

## *Hairy Oval-leaved Saxifrage.*

*DECANDRIA Digynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds.*

SPEC. CHAR. Leaves oval, somewhat heartshaped, abrupt, with cartilaginous notches. Stem naked, panicled. Capsule superior.

SYN. Saxifraga hirsuta. *Linn. Sp. Pl.* 574. *Picot Lapeyrouse Pyren. t.* 23.

IN our 22d volume, p. 1561, we have announced the discovery of this plant on the Irish mountains by Mr. J. T. Mackay, and we are obliged to that assiduous botanist for a specimen produced last June, in the Dublin garden, from a native root.

This species is very near *S. Geum, t.* 1561, but Mr. Mackay, who has observed it both in a wild and cultivated state, is satisfied of their being distinct. All we can vouch for is its being what Linnæus described as *hirsuta.* The synonym of *Geum folio circinato, acutè crenato, pistillo floris rubro,* Magnol. Hort. 87. t. 13, appears by the figure rather to belong to *S. Geum.* Linnæus justly points out the affinity of these two plants, but says the leaves of the present are oval, not kidney-shaped, which is true, and appears to be constant. The flowers are rather larger and more ornamental, having more red spots on their petals, but this may be variable. *S. hirsuta* seems an intermediate species between *Geum* and *umbrosa, t.* 663.

Engraved and published by J.& F. Swainson, London.

# COCHLEARIA Armoracia.

## *Horse-radish.*

*TETRADYNAMIA Siliculosa.*

GEN. CHAR. *Pouch* turgid, rugged; valves gibbous, obtuse. *Calyx* spreading, concave.

SPEC. CHAR. Radical leaves oblong, crenate; those of the stem lanceolate, either cut or entire.

SYN. Cochlearia Armoracia. *Linn. Sp. Pl.* 904. *Sm. Fl. Brit.* 690. *Huds.* 284. *With.* 575. *Hull. ed.* 2. 192. *Relh.* 253. *Sibth.* 200. *Woodv. Med. Bot. t.* 150.

Raphanus rusticanus. *Rati Syn.* 301.

GATHERED in June by the river side at Battersea. The plant is common enough in waste ground, from the refuse of gardens, being most truly wild in the mountainous parts of Yorkshire and Northumberland, where the ground is moist, black and spongy. When once admitted into the deep rich soil of a kitchen garden, no weed is more difficult of extirpation.

The roots are long, cylindrical, white, deep and perennial, well known for the peculiar acrid flavour which makes them acceptable, on many occasions, at the table. Stems two feet high, erect, spreading, branched, smooth, bearing scattered, sessile, lanceolate leaves, more or less jagged or cut. The radical leaves are large, oblong, crenate, veiny, sometimes pinnatifid, but more generally resembling those of a dock. Flowers white, numerous, corymbose, at length racemose. Pouch elliptical, compressed, with a short style, and large stigma. As the roots increase so fast, the fruit is seldom perfected.

Sept. 1 1810 published by J.C. Sowerby London.

# SISYMBRIUM sylvestre.

## *Creeping Water Rocket.*

*TETRADYNAMIA Siliquosa.*

GEN. CHAR. *Pod* cylindrical, bursting with nearly straight valves. *Cal.* and *Cor.* spreading.

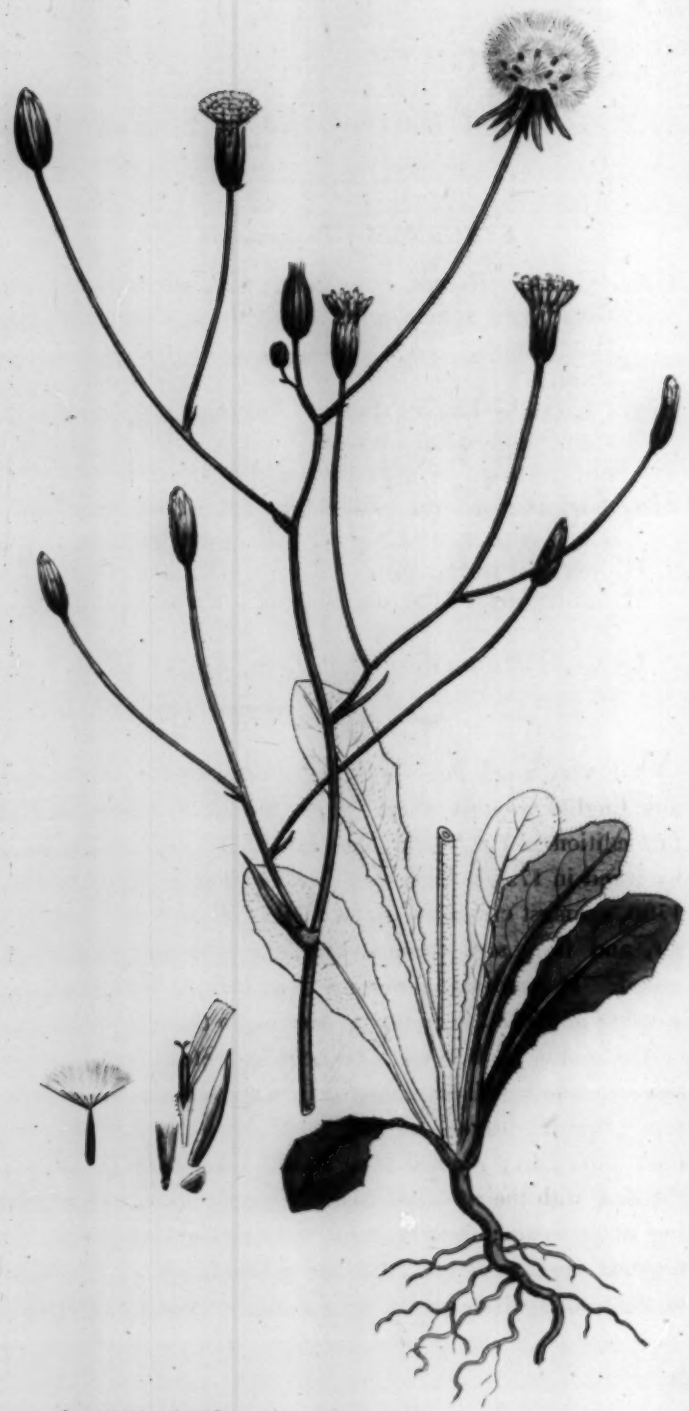
SPEC. CHAR. Pods declining. Leaves pinnate; leaflets lanceolate, deeply serrated or cut.

SYN. Sisymbrium sylvestre. *Linn. Sp. Pl.* 916. *Sm. Fl. Brit.* 701. *Hull. ed.* 2. 194. *Huds.* 296. *With.* 581. *Relh.* 257. *Sibth.* 206. *Abbot.* 143. *Curt. Lond. fasc.* 3. *t.* 41.

Eruca aquatica. *Raii Syn.* 297.

GRAVELLY moist situations produce this plant in various parts of England. In Tothill fields it abounds, as well as at Battersea, Hammersmith, &c. flowering from June to September.

The root is perennial, creeping extensively, so that the pods scarcely ever arrive at perfection. Stems erect, a foot or more in height, leafy, zigzag, angular, furrowed, roughish to the touch. Leaves alternate, pinnate, smooth; the leaflets of the lower ones decurrent, elliptic-oblong, deeply cut or toothed; those of the upper ones narrower, deeply, but sparingly, serrated, sometimes quite entire, and in some measure stalked. Common footstalk channelled. Clusters numerous, forming a kind of panicle about the tops of the stems, each of them soon lengthened out to a great extent, and becoming zigzag. Flowers of a full yellow, rendering the plant conspicuous by their colour and abundance. Style short.



Sep. 1st published by Jas. Sowerby London

# CREPIS pulchra.

## *Small-flowered Hawks-beard.*

*SYNGENESIA Polygamia-æqualis.*

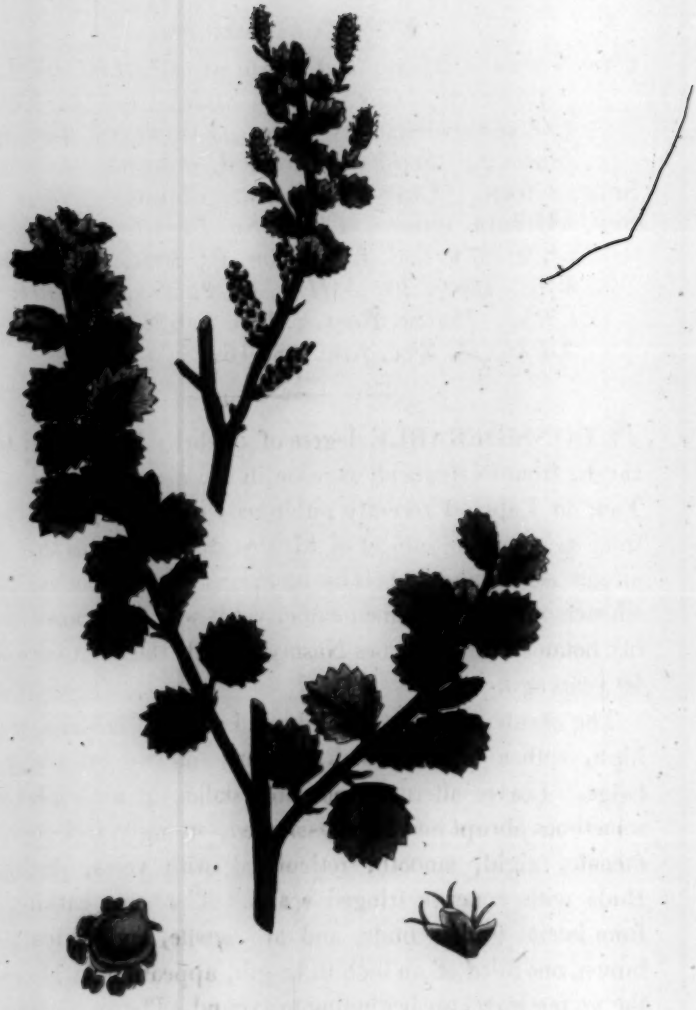
GEN. CHAR. *Recept.* roughish. *Cal.* surrounded with deciduous scales, and at length swelling into protuberances. *Down* simple, generally on a footstalk.

SPEC. CHAR. Leaves downy, toothed; those on the stem somewhat arrow-shaped. Stem panicled, corymbose. Calyx pyramidal, smooth.

SYN. Crepis pulchra. *Linn. Sp. Pl.* 1134. *Sm. Tr. of Linn. Soc. v.* 10. 344. *Ait. Hort. Kew. v.* 3. 128.
Hieracium pulchrum. *Bauh. Hist. v.* 2. 1025.
H. montanum alterum, leptomacrocaulon. *Column. Ecphr.* 248. *t.* 249.
Lapsana chondrilloides. *Linn. Sp. Pl. ed.* 1. 812.

WE very much doubt whether this plant has been seen by any English botanist of our times, though admitted into the first edition of the *Hortus Kewensis*, as having been cultivated by Rand in 1739 at Chelsea. Mr. G. Don found it wild in 1796, amongst crumbling rocks on the hill of Turin, near Forfar, and from seed communicated by him our specimen was raised. It is annual, flowering from June to September, and varying much in luxuriance according to the soil.

The root is small, taper, branching. Stem erect, downy, slender, round, hollow, panicled in a corymbose form at the top. Radical leaves obovate, thin, downy, toothed most in their lower part; the rest few, small, arrow-shaped, clasping the stem with their toothed base. Flowers small, yellow, closing about noon; their anthers and stigmas brownish. The scales at the base of the calyx are not deciduous. The down of the seed is nearly sessile, very slender, minutely toothed.



Published by J.C. Sowerby London

# BETULA nana.

## *Dwarf Birch.*

*MONOECIA Tetrandria.*

GEN. CHAR. Male, *Cal.* scale of a *catkin*, of 1 leaf, 3-flowered. *Cor.* none. *Stam.* 10—12. Female, *Cal.* scale obscurely 3-cleft, 3-flowered. *Cor.* none. *Styles* 2. *Seeds* compressed, winged.

SPEC. CHAR. Leaves orbicular, crenate.

SYN. Betula nana. *Linn. Sp. Pl.* 1394. *Fl. Lapp. ed.* 2. 274. *t.* 6. *f.* 4. *Sm. Fl. Brit.* 1012. *Huds.* 416. *With.* 207. *Hull. ed.* 2. 281. *Lightf.* 575. *t.* 25. *Pallas. Ross. v.* 1. *p.* 1. 63. *t.* 40. *f.* D—G. *Dicks. H. Sicc. fasc.* 18. 16.

A CONSIDERABLE degree of celebrity is attached to this shrub, from its frequent mention in the *Flora Lapponica*, and Tour to Lapland recently published, of Linnæus, as well as from its being the subject of his first dissertation in the *Amœnitates Academicæ*. It is by no means rare in Scotland, from whence our wild specimen came, yet it was not known to British botanists till Sir James Nasmyth made the discovery about 40 years ago.

The shrubby, rigid, much branched stem is about a yard high, with a blackish bark, slightly downy on the young twigs. Leaves alternate, on short stalks, of a circular form, sometimes abrupt and kidney-shaped, strongly and unequally crenate, rigid, smooth, reticulated with veins, deciduous. Buds with concave fringed scales. The male catkins grow from lateral leafless buds, and are sessile, cylindrical, dark brown, one third of an inch in length, appearing in May when the young leaves are beginning to expand. The female ones terminate little short shoots, with two leaves at the base, and are ovate, shorter, and green, with red styles. However valuable in the domestic œconomy of the poor Laplander, this shrub is scarcely known out of the most northern parts of Europe.

# CONFERVA albida.

## *Whitish Cottony Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

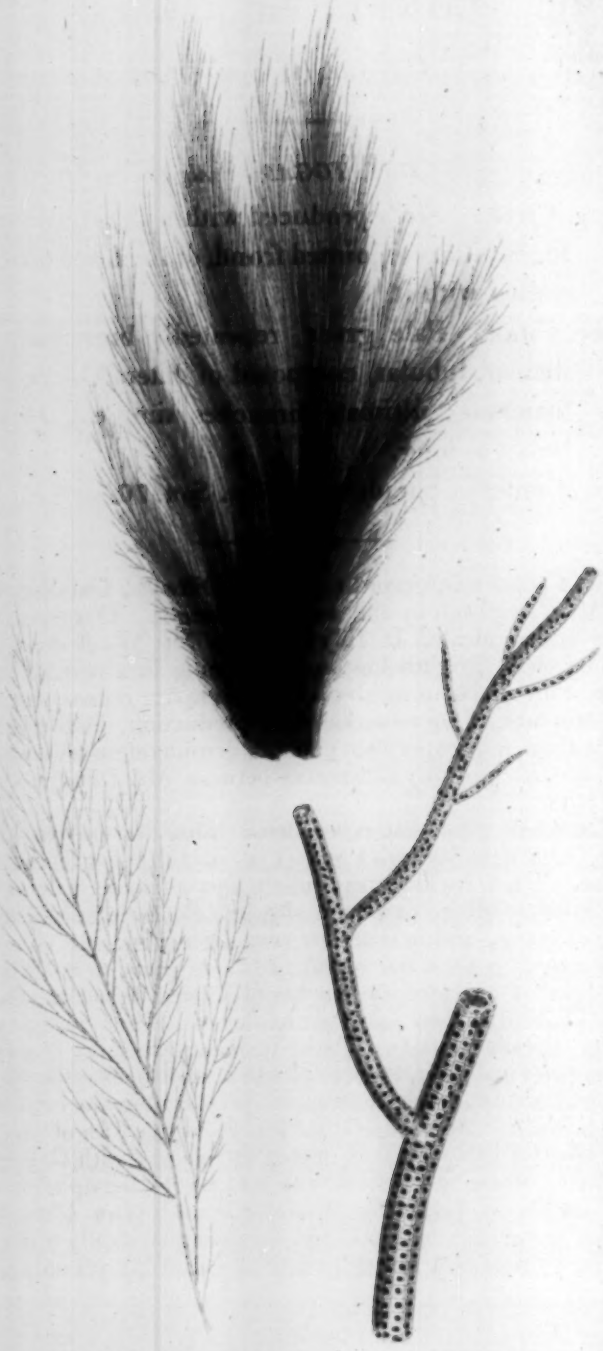
SPEC. CHAR. Greenish white, opaque. Filaments in dense tufts, much branched, capillary; branches clustered, about four together; their divisions opposite, zigzag; ultimate ones somewhat parallel. Joints even, four times as long as broad.

SYN. Conferva albida. *Huds.* 595. *With. v.* 4. 131. *Hull.* 331. *Dillw. Syn.* 32 and 66. *n.* 104. *t.* E.

C. marina tomentosa, tenerior et albicans. *Dill. in Raii Syn.* 59. *Musc.* 19. *t.* 3. *f.* 12.

BY a specimen from the Dillenian herbarium, Mr. Dillwyn has verified the synonyms of this species, and we are enabled, by the favour of Mr. W. Borrer, to exhibit it more completely than it has ever yet been, as well as to subjoin the elongated and less spreading variety, found by himself on the Sussex coast; see *Dillw. Syn.* 66.

This is probably not a rare species. Miss Hutchins observed it in June and July, in Bantry bay, as Mr. Borrer did at Brighthelmston. Its cotton-like opacity, or freedom from all gloss, is remarkable, and the dense tufted habit, caused by the copious spreading subdivisions, which are interwoven into close masses, strengthens the resemblance to that substance, as does the white colour it soon assumes, though greenish in a young and healthy state. Our specimens well answer to the characters given in the valuable work on *British Confervæ*, as well as in Hudson's *Flora*.



# CONFERVA paradoxa.

## *Chequered Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Pale green, repeatedly branched, very slender, tubular, composed of laterally-combined filaments; ultimate branches simple. Joints as broad as long.

SYN. Conferva paradoxa. *Dillw. Syn.* 70. *n.* 115. *t.* F.

THIS plant was, according to Mr. Dillwyn, first discovered by Mr. Templeton in the sea near Bangor. Our specimens were communicated in July 1811, by Mr. W. Borrer, from the beach at Brighthelmston, and, being in a perfectly fresh state, they enable us to give a more complete representation of the structure of so remarkable a production, than could be made from a dry specimen; which consideration will account for, and excuse, any differences between Mr. Dillwyn's plate and ours.

The whole plant composes dense tufts, four or five inches long, of a light yellowish green hue, and slippery tender substance. Each frond is very much and alternately branched, but little spreading, extremely slender, closely adhering to paper in drying, and in that state very slightly glossy. Under a high magnifier these fine capillary fronds prove to be tubular, composed of an indefinite number of jointed filaments, closely united laterally, their joints square, whitish, each with a green central globule of seeds. These filaments are most numerous in the principal stem, fewer in proportion as we examine higher up, and finally simple or solitary in the ultimate branches; which justifies Mr. Borrer's and Mr. Dillwyn's idea of the conformation of this vegetable, and of its analogy with *C. fœtida*, *t.* 2101. There is however much to favour the opinion of a very intelligent lady, Miss Hutchins, that it is an *Ulva*, near *ramulosa*, *t.* 2137; but the latter, spreading gradually upwards, from a narrow base, seems formed on a different principle.

2329.

Lyell del. et publ. by Jas. Sowerby London.

# CONFERVA Daviesii.

## *Daviesian Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Crimson, much branched: branches scattered, taper-pointed. Joints even, thrice as long as broad. Capsules lateral, ascending, clustered, obovate.

SYN. Conferva Daviesii. *Dillw. Syn.* 73. *n.* 122. *t.* F.

NAMED by Mr. Dillwyn in honour of our mutual friend the Rev. Hugh Davies, who found this elegant little species on the Welch coast. Miss Hutchins has collected it in Ireland, and Mr. W. Borrer at Brighthelmston. The latter only has found the fruit, with which he favoured us last July.

*C. Daviesii* grows in tufts, about a quarter of an inch high, on the larger sea-weeds, and its crimson colour often renders it very conspicuous on such as are of a less gaudy hue. The fronds are very much branched in an irregular manner; their ultimate subdivisions tipped with exquisitely fine colourless points. Their joints are even, thrice as long as broad. The fructification is copiously arranged along the upper side of the branches, in nearly sessile groups of two or three small, obovate capsules, all directed upward, each capsule containing a mass of crimson seeds. In some there appears a division, as in our *C. interrupta*, *t.* 1838; near to which species, and *pedicellata*, *t.* 1817, the present ought to be arranged.

Engraved published by J. Sowerby & Son.

# CONFERVA pennata.

## *Pinnated Brown Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Olive brown, much branched. Branches densely pectinated. Joints broader than long. Partitions dark-coloured. Capsules roundish, scattered, sessile or stalked.

SYN. Conferva pennata. *Huds.* 604. *With. v.* 4. 142. *Hull.* 335. *Dillw. Conf. t.* 86. *Syn.* 87. *n.* 166.

WE have received this from Miss Biddulph at various times, and lastly from Mr. W. Borrer, who has added the larger variety, with stalked rather oblong fruit, found by himself at Beachey head, as mentioned in Dillwyn's *Synopsis*.

*C. pennata* grows in the sea, on rocks, corallines and submarine plants, and has, according to Mr. Dillwyn, been generally overlooked for a small or bad state of *C. scoparia*, *t.* 1552, as indeed it might well be, without examination. It appears by Hudson's reference to be preserved in Petiver's *Hortus Siccus* for the *C. marina pennata* of Dillenius in Ray's *Synopsis*, which is really *scoparia*.

The plant before us composes bushy tufts, from half an inch to two inches high, of an olive brown, and is twice or thrice branched, the ultimate branches ranged in a double crowded series, opposite to each other, and spreading, so as to be truly pectinated. Sometimes they vary a little from this precise order. The partitions are dark, and the joints generally broader than long. The capsules are round or a little oblong, of a rather darker brown, scattered, either sessile or more or less stalked. They seem to strengthen the probability of what we have drawn in *t.* 1552 being the fruit of *C. scoparia*.

Pubd. as published by J. & C. Cundy, London.

# PYRUS pinnatifida.

## *Bastard Mountain Ash.*

*ICOSANDRIA Pentagynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Apple* inferior, of from 2 to 5 cells. *Seeds* in pairs.

SPEC. CHAR. Leaves deeply pinnatifid, or half pinnate, downy beneath. Flowers corymbose, with about three styles.

SYN. Pyrus pinnatifida. *Ehrh. Beitr. fasc.* 6. 93. *Exsicc. n.* 145.

P. hybrida. *Sm. Fl. Brit.* 534. *Hull. ed.* 2. 147.

Sorbus hybrida. *Linn. Sp. Pl.* 684. *Huds.* 216. *With.* 461. *Linn. Fil. fasc.* 1. *t.* 6. *Fl. Dan. t.* 301. not 302.

HUDSON admitted this tree into his *Flora*, solely because it was said to grow on the walls of castle Dinas y brān, Denbighshire; but Dr. Prattinton having brought us specimens from the spot, which proved *P. Aria*, *t.* 1858, a mark of doubt was prefixed to the present species in *Fl. Brit.* This doubt however is since removed by wild specimens, sent by the late Mr. J. Mackay, which he gathered in rocky parts of several mountains at the north end of the isle of Arran, and which are the true Linnæan *Sorbus hybrida*. For this we now gladly adopt Ehrhart's most excellent name, published in 1791, nine years before the *Fl. Brit.* though till lately unknown to us. This measure is become necessary, as Willdenow has another *Pyrus hybrida*. We never scruple yielding to any authority by which science is advanced, though we struggle, sometimes in vain, against what deforms it.

The tree in question is more nearly allied in habit to *P. Aria* than to *aucuparia*, *t.* 337, differing chiefly in having the leaves deeply pinnatifid, and their lower half almost pinnate, whence Linnæus judged it a mule between these two species. It is however propagated by seed and remains unaltered, being frequent in gardens, flowering in May, and making a pretty appearance with its dense tufts of scarlet fruit in August and September.

Oct. 1 1810 published by Jas. Sowerby London.

# HIERACIUM dubium.

## *Branching Mouse-ear Hawkweed.*

*SYNGENESIA Polygamia-æqualis.*

GEN. CHAR. *Recept.* nearly naked, dotted. *Cal.* imbricated, ovate. *Down* simple, sessile.

SPEC. CHAR. Leaves elliptic-lanceolate, nearly entire, besprinkled with long hairs; rather glaucous beneath. Scions creeping. Stalk bearing several flowers.

SYN. Hieracium dubium. *Linn. Sp. Pl.* 1125. *Sm. Fl. Brit.* 828. *Tr. of Linn. Soc. v.* 9. 226. *Huds.* 344. *With.* 684. *Hull. ed.* 2. 230.

H. Auricula. *Fl. Dan. t.* 1111.

H. n. 53. *Hall. Hist. v.* 1. 22.

IT is hoped that all uncertainties respecting the synonyms of this species and *H. Auricula* are now removed by the remarks in the Linn. Trans. cited above. We have lately verified the present as a British native, by living specimens from the Cambridge garden, received from Scotland by its excellent Curator, confirming the authorities on which we depended in *Fl. Brit.* Mr. Donn favoured us at the same time with *H. Auricula* of his Catalogue, which, we are sorry to say, appears a very slight variety of *dubium*, so that we have still to seek the real *Auricula* on the exposed top of some Scottish or Westmoreland mountain.

Our garden specimen is probably more luxuriant than wild ones. The natural time of this plant's flowering seems to be June and July. The spreading leafy scions throw out many perennial roots, like *H. Pilosella, t.* 1093, from which this differs in having longer narrower leaves, glaucous (not white and cottony, though occasionally downy,) beneath, and a stalk bearing two, three or four flowers, rather smaller than in *Pilosella*, and yellow on both sides, not beautifully red underneath. The leaves are besprinkled, and their base fringed, with coarse spreading hairs.

As: published by J. & C. Loudon, London

# SALIX sphacelata.

## *Withered-pointed Willow.*

*DIOECIA Diandria.*

GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary* a gland at the base of the stamina. *Stam.* 1—5. Female, *Cal.* & *Nect.* like the male. *Cor.* none. *Stigmas* 2. *Caps.* superior, of 1 cell and 2 valves. *Seeds* downy.

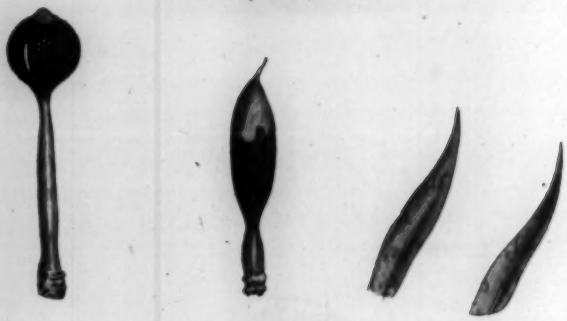
SPEC. CHAR. Leaves entire, elliptical, even; downy on both sides; somewhat withered at the point. Stipulas obsolete. Capsules tapering.

SYN. Salix sphacelata. *Sm. Fl. Brit.* 1066. *Hull. ed.* 2. 295.

S. lanata. *Lightf.* 602. *With.* 50.

S. capreæ varietas. *Hoffm. Sal. v.* 1. 28. *t.* 5. *f.* 4. *t.* 21. *f.* d.

AN inspection of Lightfoot's herbarium, in the hands of Her Majesty at Frogmore, enabled us accurately to determine all his *Salices*, by comparison with those of the Linnæan collection, taken thither on purpose. The present proved to be Lightfoot's *lanata*, though essentially different from that of Linnæus. The Rev. Dr. Stuart gathered it in a valley near Finlarig, at the head of Loch Tay, flowering in April and May. We have not met with it in any garden, and Mr. Sowerby unluckily is not certain how he came by the specimens in the plate. By Hoffmann it should seem no very uncommon plant, and perhaps may not be confined to alpine situations, having been overlooked as a variety of *S. caprea*, *t.* 1488. From that species nevertheless it essentially differs. It is less arboreous. The leaves are but an inch and half, or thereabouts, in length, quite entire; their substance rather thin and delicate; their surface even, not rugose; their points often remarkably withered or blasted, as it were, but this is scarcely seen in a young state. Both sides are downy, the upper in time becoming smooth, at least towards the point. Stipulas small or none. Catkins cylindrical, not tumid. Germens on long stalks, regularly tapering upward, at length nearly smooth. Stigmas nearly sessile, undivided, or only notched, not deeply cloven.



Oct.1.1797 published by Jas. Sowerby London.

# ANDRÆA nivalis.

## *Tall Slender Andræa.*

*CRYPTOGAMIA Musci.*

GEN. CHAR. *Caps.* oblong, of four valves, whose points adhere to the *lid.* *Fringe* none.

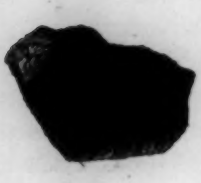
SPEC. CHAR. Stem branched. Leaves loosely imbricated, lanceolate, single-ribbed, curved toward one side. Sheath-scales similar to the leaves.

SYN. Andræa nivalis. *Hooker Tr. of Linn. Soc. v.* 10. 395. *t.* 10. *f.* 4.

COMMUNICATED by Mr. W. Borrer, who with Mr. Hooker discovered this new *Andræa* upon rocks on the summit of Ben Nevis, or Nivis, at the east end. It is perennial, producing fruit in the summer.

The present species greatly exceeds all previously known in its height, which is three inches, or more. The stems form dense tufts, and are upright, slender, leafy, alternately branched, rarely quite simple. Leaves rather loosely imbricated, lanceolate, pointed, beardless, entire, slightly concave, brownish, very minutely dotted, furnished with a strong, dark red midrib, all more or less sickle-shaped, and curved toward one side. The scales of the sheath resemble the leaves, except that, according to Mr. Hooker, the rib of the former extends to about half their length only. Fruitstalk terminal, solitary, tumid at the base, gradually elongated to about a quarter of an inch in height. Capsule elliptical, dark brown, strongly reticulated, with a small inversely conical base or *apophysis*, the valves cohering at their points by means of the immoveable lid, but gaping laterally in dry weather to discharge the seeds. Veil close, torn off irregularly from its base.

2335



Art.1 was published by B.t Tuesday London

# LICHEN atratus.

## *Inky-crusted Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust continued, even, minutely tessellated, of a greyish rather opaque black; its fragments angular, slightly concave. Shields in the interstices, half sunk, flattish, coal-black, with an elevated, entire, black border.

FOUND by Mr. G. Don, upon granite rocks at the head of Loch Lee in Glen Esk, Angusshire, but rarely. Having in vain attempted to refer this *Lichen* to any of those described by Acharius, though furnished with most of his specimens, and being anxious to clear up, as much as possible, the difficulties of the tribe to which it belongs, some of which may be found in *v.* 26, *t.* 1829—31, and another in *v.* 25, *t.* 1737, we hope a figure and description of it may not be unwelcome. It most resembles, at first sight, the true *Lecidea fusco-atra*, Ach. Meth. 44, for which that author doubtingly quotes *Lichen carbonarius* of Wulfen, more agreeing, as we judge, with his *Lecidea fumosa*, 41; but the crust of this *fusco-atra* consists of minute, concave, shining-black, crowded warts, on a deep-black ground, agreeing rather in structure with our *t.* 2317 and 2336.

Our *L. atratus* has a genuine tartareous, minutely tessellated, though thin, crust, composing inky stains, as it were, on the hard rock, and in that respect looking like *L. niger*, *t.* 1161. The surface of the fragments is very smooth, of a greyish black, with little or no gloss. Shields numerous, sunk in the cracks, scarcely raised above the surface, rather smaller than the fragments, very black, slightly concave, with an elevated, thick, entire, smooth border, of their own colour and substance.—*L. atratus* of Hedwig is a fungus.

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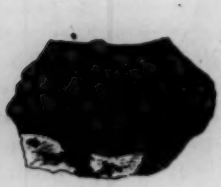

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# LICHEN atro-albus.

## *Black and white-crusted Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

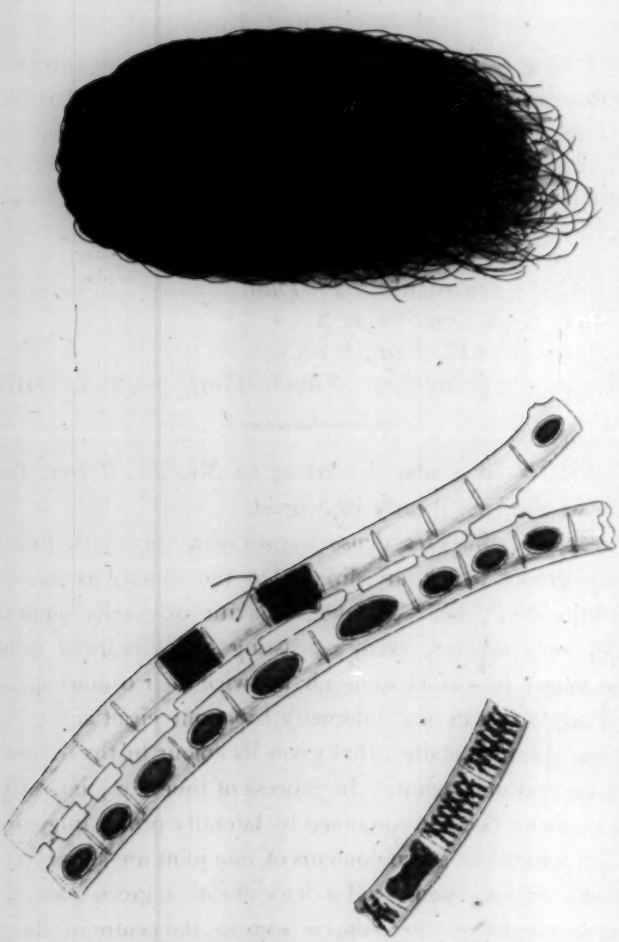
SPEC. CHAR. Crust indeterminate, very thin, continued, black, with grey, roughish, convex, crowded warts. Shields in the interstices, coal-black, flattish, at length convex, with an elevated black border.

SYN. Lichen atro-albus. *Linn. Sp. Pl.* 1607. *Ach. Prod.* 63. *Wulfen in Jacq. Coll. v.* 2. 185. *t.* 14. *f.* 1.
Lecidea atro-alba. *Ach. Meth.* 45.

GREAT difficulties have attended the determination of some of the Linnæan crustaceous Lichens, from the brevity of their characters and the want of authentic specimens for comparison. It would be endless to particularize, and often impossible to ascertain, what has been intended under the present appellation by various writers. We must content ourselves with the authority of Acharius and Swartz, and we have no better, to fix this as the *atro-albus* of Linnæus, with whose short account it agrees; and we exhibit at fig. 2 their identical specimen. At fig. 1 is a native one, received from the north of England by Mr. Turner, which we presume sets the question for ever at rest as to our *Flora*. We gladly do Wulfen the justice to observe that he is one of the few botanists who have rightly determined this difficult species, though he did not find the shields.

Under our *L. verruculosus*, *t.* 2317, we have adverted to *atro-albus*. The crust of the latter, though likewise black, thin, and inseparable from the stone, is more continued and less fibrous. The copious warts it bears are crowded, convex, grey or brownish, roughish with a sort of powder that may be rubbed off. Shields sessile *between the warts*, not upon them, coal-black, flattish when young, with a thick, entire, nearly even border of the same hue and substance: when old, the disk becomes convex, the border more inconspicuous. This plant gives some idea of *L. cæruleo-nigricans*, *t.* 1139, in miniature.

2337.



Pubd by J. & F. Rivington, London

# CONFERVA nitida.

## *Deep-green Combined Conferva.*

*CRYPTOGAMIA Algæ.*

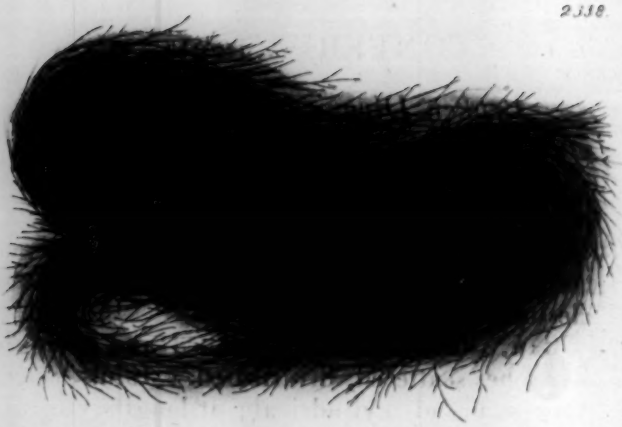
GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

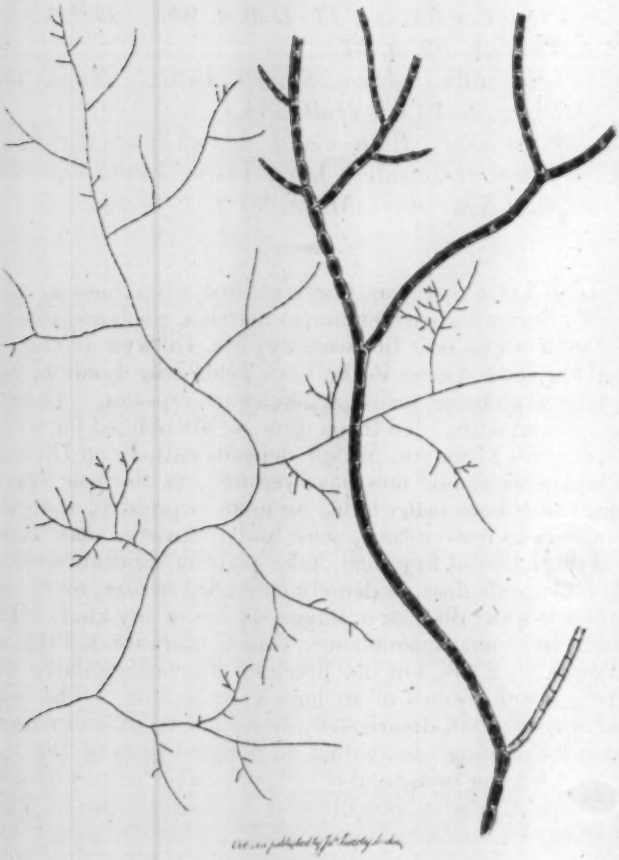
SPEC. CHAR. Deep shining green. Filaments unbranched, slender, slippery. Joints rather longer than broad, becoming laterally conjugated. Grains in several close spiral lines.

SYN. Conferva nitida. *Fl. Dan. t.* 819. *Dillw. Conf. t.* 4. *f.* C. *Syn.* 49. *n.* 34.
C. jugalis. *Fl. Dan. t.* 883.
Conjugata princeps. *Vauch. Conf.* 64. *t.* 4. Dillw.

COMMON in ponds, according to Mr. W. Borrer, from whom we received it early in August.

The whole composes dense masses of a very dark though shining green, which are slippery to the touch, as usual in this conjugated tribe. The filaments are originally separate, simple, very slender, even, consisting of cylindrical joints, whose length is seldom so much as twice their diameter, and which are each occupied internally by about eight spiral lines of green granular matter, that gives its colour to the otherwise white and pellucid plant. In process of time the joints of parallel filaments become conjoined by laterally protruding tubes, through which the green contents of one joint are conveyed to its associated neighbour, and a dense elliptical green mass, supposed to consist of the seeds, is seen in the centre of the receiving joint, the parallel one remaining empty and transparent; which latter circumstance is, as Mr. Borrer justly remarks, not sufficiently attended to in our *t.* 1656, where another of these curious species is delineated. Sometimes it seems this transfusion fails, and the joints which do not meet with any associate become internally brown, and probably decayed.





Lee & Co published by Sir Thomas Lee

# CONFERVA fracta.

## *Broken Divaricated Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green, much branched and entangled. Branches scattered, divaricated. Joints twice as long as broad, cylindrical; at length elliptical. Capsules roundish, sessile.

SYN. Conferva fracta. *Fl. Dan. t.* 946. *Dillw. Conf. t.* 14. *Syn.* 65. *n.* 97.

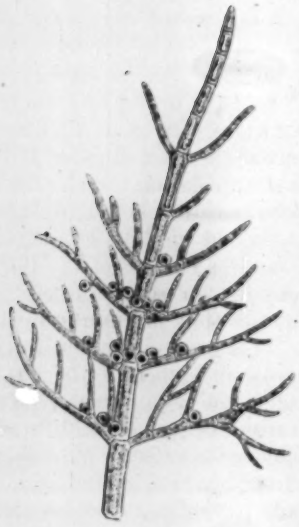
C. vagabunda. *Linn. Sp. Pl.* 1637. *Huds.* 601. *With. v.* 4. 139. *Hull.* 334.

C. divaricata. *Roth. Catal. v.* 1. 179. *t.* 3. *f.* 1.

C. marina trichoides, lanæ instar expansa. *Dill. in Raii Syn.* 60. *Musc.* 30. *t.* 5. *f.* 32.

DILLENIUS had this *Conferva* first from Sussex, where Mr. W. Borrer finds it common in marshes, pools and ditches; nor does it occur near the sea only, Mr. Dillwyn having observed the same species in the Lock fields near London, bearing lateral globular sessile tubercles or capsules. These we have not met with. To this author we are obliged for settling the Linnæan synonym, which depends entirely on Dillenius, and which we should now have restored, as the true specific name, had it been better latin, or more expressive, than it is. In such cases convenience, sense and propriety, may surely, at the discretion of fit judges, take place of rigid authority.

The filaments float, in densely entangled masses, on the surface of salt-water ditches, or stagnant pools of any kind. They accord, in general resemblance, with *C. flexuosa, t.* 1944, and *flavescens, t.* 2088, but the branches are not regularly two-ranked, nor the joints of so long a proportion. The whole plant is very much divaricated, somewhat rigid, and many of the joints following one another in different parts of the main branches, become tumid and elliptical, as if pregnant with seeds, or perhaps with what is equivalent to pollen, if we may form any guess, by analogy, from *t.* 2337.



# CONFERVA Turneri.

## *Turnerian Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Red, erect, crowded, oppositely pinnate. Branches simple or somewhat pinnate. Joints thrice as long as broad. Capsules globose, sessile or stalked, on the lower part of the branches, leaning one way.

SYN. Conferva Turneri. *Dillw. Conf. t.* 100. *Syn.* 79. *n.* 144.

Ceramium Turneri. *Roth. Catal. v.* 3. 128. *t.* 5. Dillw.

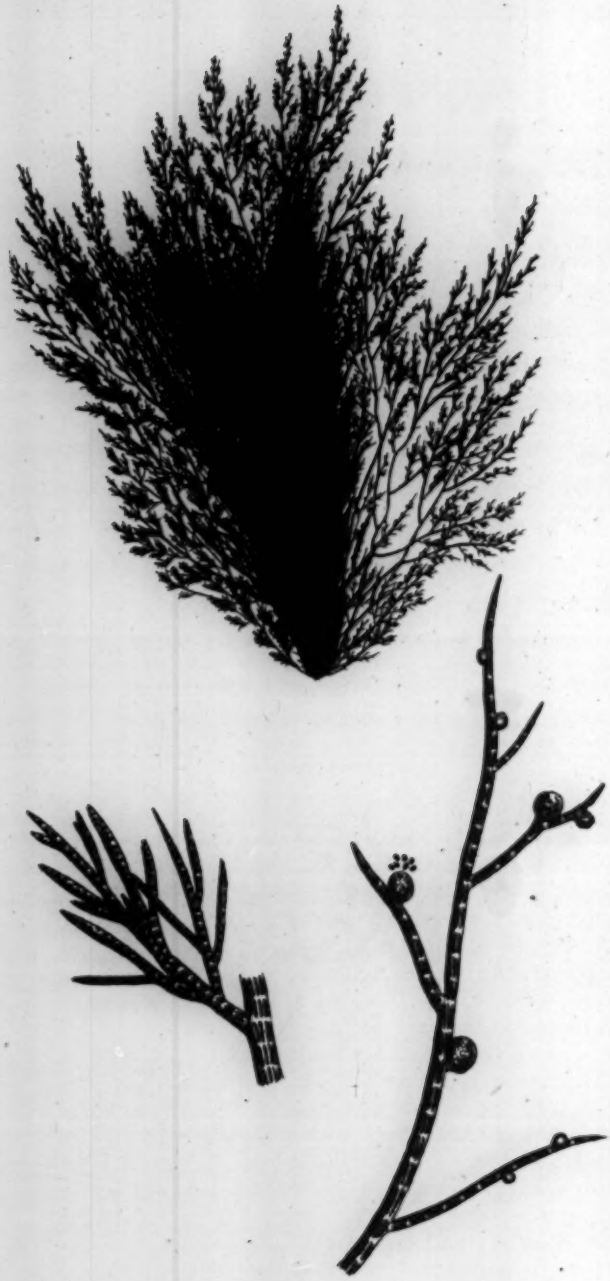
WHAT we figured under this name in *v.* 23. *t.* 1637, was not known to us as *C. Plumula* of Ellis, nor had we then received the fasciculus of Dillwyn in which it is exhibited with that appellation; owing to accidents incident to such publications. Still less had we any information of the present being published in Roth's third volume, which we have only occasionally seen. Possibly the two species may have been confounded in some of our communications respecting them, though they are unquestionably very different.

This grows on other stouter submarine plants, in dense tufts, about an inch high, of a delicate rose-colour. Each frond is erect, linear-lanceolate, composed in a pinnate manner of numerous opposite short branches, which are sometimes simple, oftener imperfectly pinnate, rarely again branched. The joints throughout are cylindrical, about thrice as long as broad, with pale partitions. Globose red capsules, sessile or stalked, solitary or in groups, are found on the upper side of the lower part of the branches. Our specimens were sent from Southampton by Miss Biddulph, in Jan. 1806, and June 1807.—To *t.* 1637 must now be substituted the following synonyms.

# CONFERVA Plumula.

## *Little Feathery Conferva.*

**Conferva Plumula.** *Ellis in Phil. Trans. v.* 57. 425. *t.* 18. *f.* g. G. *Dillw. Conf. t.* 50. *Syn.* 79. *n.* 145.



Oct 1 1805 published by J. Sowerby London.

# CONFERVA nigra.

*Slender Compound-jointed Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Reddish black, much and alternately branched, slender, rigid. Ultimate branches short, awlshaped, sometimes clustered. Joints twice as long as broad, compound. Capsules lateral, solitary, ovate.

SYN. Conferva nigra. *Huds.* 595. *With. v.* 4. 131. *Hull.* 331. *Dillw. Syn.* 32 *and* 86, *n.* 162.

C. atro-rubescens. *Dillw. Conf. t.* 70.

OUR liberal friend Sir Thomas Frankland having furnished us with an authentic collection of many of Hudson's marine plants, which he and the Rev. H. Davies are among the very few people, now living, who are competent to explain, we have confirmed the above synonyms. Our specimen was found by Mr. W. Borrer at Brighthelmstone, in July, 1811, nor is the plant uncommon. A strict affinity exists between this species, *nigrescens*, *t.* 1717, and *fucoides*, *t.* 1743, and it ought to stand next to them in a natural series.

The joints of this are rather longer, and composed of fewer tubes laterally than either of those, but we do not presume to lay much stress on these circumstances. Its short, lateral, awlshaped, clustered branches, which do not bear the fruit, are indicated by Hudson and Dillwyn as characteristic, but we have not always met with such. The capsules are scattered laterally and solitarily upon branches that are subdivided in an alternate manner, and are small, ovate, abrupt, reticulated; sessile in our specimens, but Mr. Dillwyn has found them stalked. The colour of the whole is reddish brown in a fresh state, turning black by drying, as in all this tribe.

Curtis's Botanical Magazine, published by S.W. Curtis, London

# SALIX vacciniifolia.

## *Bilberry-leaved Willow.*

*DIOECIA Diandria.*

GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary* a gland at the base of the stamina. *Stam.* 1—5. *Female*, *Cal.* and *Nect.* like the male. *Cor.* none. *Stigmas* 2. *Caps.* superior, of 1 cell and 2 valves. *Seeds* downy.

SPEC. CHAR. Leaves ovate, serrated; smooth and even above; glaucous and silky beneath. Capsules ovate, silky. Stems decumbent.

SYN. Salicis prunifoliæ varietas. *Sm. Fl. Brit.* 1055. S. myrtilloides. *Donn. Cant. ed.* 5. 231.

COMMUNICATED by Mr. George Anderson, F.L.S., from his garden. It appears to be not uncommon in Scotland, especially in the south. We had specimens near thirty years ago from the garden of the Rev. Dr. Walker at Moffat, who is said to have given this species the name we have adopted, and we have never been able satisfactorily to refer those specimens either to our *S. prunifolia*, *t.* 1361, or *venulosa*, *t.* 1362; neither were we quite certain of one from the Rev. Dr. Stuart, mentioned in *Fl. Brit.* under the former.

The present plant differs from *prunifolia* in its humble, partly procumbent, mode of growth, smaller size, slender branches, and narrower leaves, which are much more silky beneath with close-pressed hairs. In their catkins we find no material disagreement. It differs from *venulosa* in the even upper surface of the leaves, and thicker catkins.—The plant before us may possibly be the *myrtilloides* of Villars, of which we have a morsel from the author, but it is not that of Linnæus.—The reader will please to observe, that where silkiness of leaves, or downiness of branches, is mentioned in our account of *prunifolia*, we had rather this species in view, as a supposed variety, in which those characters are, at least, more remarkable.

Now published by J. & C. Loudon

# SALIX rupestris.

## *Silky Rock Willow.*

*DIOECIA Diandria.*

GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary* a gland at the base of the stamina. *Stam.* 1—5. Female, *Cal.* and *Nect.* like the male. *Cor.* none. *Stigmas* 2. *Caps.* superior, of 1 cell and 2 valves. *Seeds* downy.

SPEC. CHAR. Leaves obovate, serrated, flat, even, silky on both sides. Stipulas hairy. Branches minutely downy. Germen stalked, awlshaped, silky. Stigmas undivided.

SYN. Salix rupestris. *Donn. Cant. ed.* 5. 231.

WE have this from Mr. G. Anderson under the above name, flowering in April. Mr. W. Borrer gathered the same on the rocks of Craig Challoch and Mael Ghyrdy in the Highlands. It is doubtless very distinct from all we have hitherto published, but we have no means of being certain that it is not included under some name in Willdenow's *Sp. Pl.* having had only an occasional inspection of the volume containing his *Salices*.

*S. rupestris* is a trailing or depressed shrub; the branches very finely downy, of a dark hue. Leaves about an inch long, obovate, acute, broadish, even and flat, not wrinkled, finely and regularly serrated, veiny, silky on both sides. The scales or small leaves of the flowering buds are very smooth above. Stipulas small, ovate, hairy. Catkins ovate and thick, their scales very hairy; the female ones soon elongated and cylindrical. The germen, which is stalked, hairy, and at first rather ovate, becomes lengthened and awlshaped. Style prominent, smooth. Stigmas ovate, scarcely notched, never deeply cloven.

# SALIX Andersoniana.

## *Green Mountain Sallow.*

*DIOECIA Diandria.*

GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary* a gland at the base of the stamina. *Stam.* 1—5. Female, *Cal.* and *Nect.* like the male. *Cor.* none. *Stigmas* 2. *Caps.* superior, of 1 cell and 2 valves. *Seeds* downy.

SPEC. CHAR. Leaves elliptic-oblong, acute, finely notched, slightly downy; paler beneath. Stipulas half-ovate, nearly smooth. Branches minutely downy. Germen stalked, smooth. Stigmas cloven.

FOR this also we are obliged to Mr. Anderson, by whose name we have distinguished the species. The Rev. Dr. Walker, it seems, used to call it *S. dalbensis*, but that appellation is contrary to rule, and has never been published.

The plant is found in various parts of Scotland, forming a considerable bush or small tree; flowering in May. The branches, green the first year, are afterwards of a sooty brown; at all times clothed with a dense, extremely short, curved down. Leaves on shortish downy stalks, nearly elliptical, an inch or inch and half long, acute, flat, finely crenate rather than serrated, of a bright pleasant green; paler beneath, more or less downy on both sides, especially the rib and veins, with minute hairs. Stipulas small, half-ovate, toothed, slightly downy, at length vaulted. Female catkins short, ovate, with black hairy scales. Their stalk is very hairy, and the floral leaves are almost as long as the catkin. Germen on a longish smooth stalk, ovate, taper-pointed, round, quite smooth and naked. Style awlshaped. Stigmas deeply cloven. Even the catkin of ripe seed is not above an inch long.

Nov 1 1819 published by J. Sowerby London

# SALIX Forsteriana.

## *Glaucous Mountain Sallow.*

*DIOECIA Diandria.*

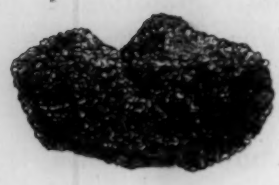
GEN. CHAR. Male, *Cal.* the scales of a catkin. *Cor.* none. *Nectary* a gland at the base of the stamina. *Stam.* 1—5. *Female*, *Cal.* and *Nect.* like the male. *Cor.* none. *Stigmas* 2. *Caps.* superior, of 1 cell and 2 valves. *Seeds* downy.

SPEC. CHAR. Leaves elliptic-obovate, acute, notched, slightly downy; glaucous beneath. Stipulas vaulted. Branches minutely downy. Germen stalked, silky. Stigmas undivided.

MR. T. F. FORSTER, F.L.S., long ago supplied us with specimens and living plants of this willow, originally obtained from Scotland, where it is far from rare; but bearing considerable resemblance to some others, it has never been described. It flowers in May.

This is a larger shrub than our *S. Andersoniana*, and though akin to that species, differs in the greater size and firmness of its adult leaves, their darker more shining upper, and glaucous under, side. Their pubescence is very slight indeed, except on the midrib and footstalks, where it is dense, though extremely short. Stipulas vaulted, toothed, rather hairy. Female catkins an inch long when in blossom, afterwards twice as much, but their floral leaves do not exceed those of *S. Andersoniana*. Germen ovate, taper-pointed, silky, on a hairy stalk. Style shortish, smooth. Stigmas thick, undivided. This species, sufficiently distinguished by the above characters from *t.* 2343, approaches on the other hand to *S. hirta*, *t.* 1404, turning, like that, black in drying; but the *hirta* is a tree, vastly more hairy, with larger, flat, quite smooth stipulas; its leaves heart-shaped at the base. We know nothing of its female catkins.

2345.



Now or as published by Jas. Sowerby, London.

# OPEGRAPHA Persoonii.

## *Rock Opegrapha.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

SPEC. CHAR. Crust leprous, indeterminate, whitish. Clefts aggregate, somewhat branched, contorted, rugged, linear.

SYN. Opegrapha Persoonii. *Ach. Meth.* 17. *Winch. v.* 2. 30.

O. rupestris. *Pers. in Ust. Ann. fasc.* 11. 20.

Lichen Persoonii. *Ach. Prodr.* 19.

β. *Ach. Meth.* 17.

L. simplicis varietas. *Dav. in Tr. of Linn. Soc. v.* 2. 284.

FOUND on calcareous rocks, or on sand-stones, granites, and walls of various materials. Our specimen on coarse white sand-stone was communicated by the Rev. H. Davies, and shows both states of the species. That part in which the fructification is most dispersed and simple, agrees with an authentic specimen of *O. Persoonii* from Acharius. The more crowded or aggregate part is the variety β, described by Mr. Davies as one state of his *Lichen simplex*, see *t.* 2152, from which however it proves, now this tribe of plants is better understood, totally distinct.

The crust is dispersed, very thin and powdery, often scarcely discernible at an advanced period of growth. Clefts deep black, rather shining, elevated; sometimes scattered, short, and very small; more frequently aggregate, or branched; in the abovementioned variety especially they are, as it were, heaped together. They are twisted or wavy, rugose, with a deeply impressed disk narrower than the margins.

2346.

Published by J.ᵒ Sowerby London.

# OPEGRAPHA nimbosa,

## *Clouded Opegrapha.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

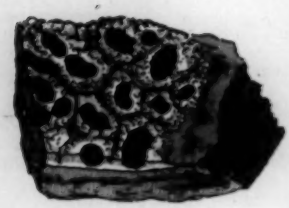
SPEC. CHAR. Crust leprous, white, shining, rugged, cracked. Clefts simple, minute, rounded, flattened, crowded.

SYN. Opegrapha nimbosa. *Ach. Meth.* 18. *t.* 1. *f.* 8.

GATHERED on the barks of large trees at Coltishall, Norfolk, by Mr. D. Turner, who judges it to be what Acharius intends under the above appellation; nor do we see any reason for doubt, though, for want of an original specimen, we cannot be absolutely certain.

This ranks among the smaller species of its genus. The crust is, as Acharius says, very white, spreading indeterminately, thin, in some degree polished, rugged, at length cracked and very uneven. Clefts but little projecting, numerous, roundish or oblong, curved, obtuse, with a very thin black edge, and a dilated hoary disk. The figure in Acharius represents the latter black, as indeed is every part at an early stage of growth, when the clefts are short and elliptical, almost round.—The reader will observe a considerable degree of affinity betwixt this and our *Lichen lynceus*, *t.* 809, except that the latter is much larger in all its parts.

2347.



Nunn sculpt. published by J.o Sowerby London.

# OPEGRAPHA rubella.

## *Reddish Opegrapha.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

SPEC. CHAR. Crust continued, limited, reddish ash-coloured, slightly rugged. Clefts short, rounded, somewhat curved, their disk broader than the borders.

SYN. Opegrapha rubella. *Pers. in Ust. Ann. fasc.* 7. 31. *t.* 1. *f.* 2, *A, a. Ach. Meth.* 21. *Winch, v.* 2. 30, Lichen rubellus. *Ach. Prodr.* 22.

ON the trunks of large trees; communicated by Mr. Turner. Mr. Winch has thought this scarcely distinct from *O. vulgata, t.* 1811, but we find sufficient differences. The crust of the present is more uninterrupted, of a reddish smoky hue. Clefts regularly scattered all over it, like dots, numerous, short, rounded, almost all separate; their disk black, flattened, at least as broad as the margins, frequently broader. Persoon's figure represents the clefts more pointed at each end than we find them, but we see no material cause to suspect his synonym, upon which that of Acharius solely depends.

We have now published every species of this genus, known to be British, except *O. conglomerata* and *congesta*.

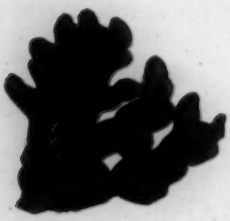


Plate 2348 published by Jas Sowerby London

# COLLEMA plicatile.

## *Plaited Collema.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Shields* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

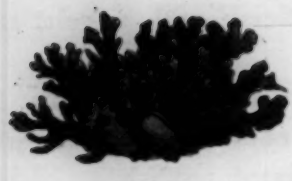
SPEC. CHAR. Frond somewhat fleshy, imbricated; lobes plaited, rounded. Shields reddish brown, concave, crowded.

SYN. Lichen plicatilis. *Ach. Prodr.* 129. *Act. Nov. Holm. v.* 16. 11. *t.* 1. *f.* 2. *Bernh. in Schrad. Journ. for* 1799. *fasc.* 1. 13.

Parmelia plicatilis. *Ach. Meth.* 240.

FOR this we are indebted to Mr. Griffith, who sent it from North Wales; and we have also fine specimens named by Dr. Acharius.

Wet or inundated rocks, in alpine situations, produce the present species, whose dark-green frond is of an imbricated, clustered, plaited, orbicular form, with numerous small lobes; its texture between membranous and fleshy; the surface smooth. Shields very plentiful, more or less crowded or clustered, sessile, sometimes elevated, the size of common pins' heads. Their shape is cup-like, or almost globose, with a concave reddish-brown disk, and thick, smooth, inflexed border, of the substance of the leaf. This border often remains long after the disk and its contents are gone, the inside assuming a pale or whitish aspect.



Nov. 1 1811 published by G.B. Sowerby London

# COLLEMA tenax.

## *Tenacious Collema.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Shields* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

SPEC. CHAR. Frond rather glaucous, fleshy, imbricated; lobes obtuse, somewhat palmate. Shields depressed, dilated, reddish.

SYN. Lichen tenax. *Swartz. Act. Nov. Upsal. v.* 4. 249. *Ach. Prodr.* 128. *Act. Nov. Holm. v.* 16. 9. *t.*1. *f.* 1. *Bernh. in Schrad. Journ. for* 1799. *fasc.* 1. 14. *t.* 2. *f.* 3.

Parmelia tenax. *Ach. Meth.* 231.

SENT from North Wales by the Rev. Hugh Davies. It grows in alpine moist situations, amongst mosses, to which its tenacious, fleshy and juicy fronds closely adhere. The form of the whole is more or less regularly orbicular, the segments spreading in a radiating position, subdivided in a dichotomous palmate manner, being not very densely imbricated. They are flat, and their ultimate lobes blunt. The green inclines to glaucous, and by drying becomes opaque and lead-coloured. Shields numerous, scattered, depressed, of a light red brown; when young slightly sunk in the leaf, and a little concave; afterwards more prominent, rather convex and uneven, dilated, with a narrow border of the substance of the leaf, which sometimes becomes tumid and notched.

Published by Jas. Sowerby London

# CONFERVA crispata.

## *Branching Cross-jointed Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green, branched, crisped and entangled. Branches alternate, copious, acute. Joints even, several times longer than broad, alternately contracted when dry.

SYN. Conferva crispata. *Roth Catal. v.* 1. 178. *Dillw. Conf. t.* 93. *Syn.* 64. *n.* 94.

COLLECTED in pools in Sussex, July 3, by Mr. W. Borrer, who had some doubts respecting Dillwyn's synonym. The description of Roth indeed best agrees with our plant as to colour, which he says is, in summer, an extremely bright green, at which season the plant floats in large masses, including many air-bubbles. In autumn and winter it becomes of a duller or darker hue, and sinks to the bottom.

The filaments are about a foot long, or more, densely entangled, rather tough, destitute of gloss, curled and crisped, especially when old, not disentangled without difficulty or injury. We find the ultimate branches, at least, copious, not distant; their points very acute. The joints in the principal parts of the plant are perfectly even and cylindrical, four or five times as long as broad. By drying they become elliptical and compressed, decussating each other alternately, as in the true *C. capillaris* of Linnæus, hereafter, as we hope, to be described, which the present species also much resembles in general aspect, whether recent or dried, but the *capillaris* is simple.

Nov 1 1811 published by J. Sowerby

# CONFERVA granulosa.

## *Granular Olive Conferva.*

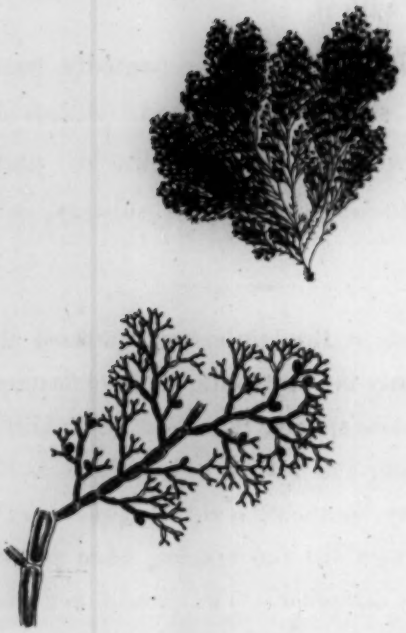
*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Olive-green, very much branched, slender. Branches scattered, compound, spreading, with pellucid taper points. Joints as broad as long, tumid when old. Capsules lateral, scattered, sessile, obovate.

ABUNDANT on submarine plants at Brighthelmston and Shoreham, where Mr. W. Borrer collected these specimens early in July. Our liberal correspondent remarks an affinity in this species to *C. siliculosa*, *t.* 2319, which it resembles in colour, but the ramification is evidently different. The branches are often lengthened out into slender colourless points, whose joints are twice as long as broad; while those of the other parts are scarcely more than half that length. The latter become tumid with age, assuming somewhat of a beaded appearance. Here and there occur, at the sides of the branches, small, solitary, sessile, obovate, brown and opaque seed-vessels; at least so they appear to be; but those who are at all conversant with the "wonders of the deep" will never speak dogmatically on this subject, knowing how infinite is the variety of animal as well as vegetable productions, hitherto unclassed by the most curious naturalist, and how Proteus-like their appearances, as they attach themselves, in different states, to objects with which we may chance to be acquainted. We still therefore, with our worthy friend Dillwyn's leave, doubt, for him and for ourselves, on some of these subjects; see *Conferva dichotoma*, his *t.* 15, our *t.* 932.

2352.



Nov. 1. 1812 published by Jas. Sowerby London.

# CONFERVA corymbosa.

## *Corymbose Red Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Rose-coloured, repeatedly branched, corymbose, slender and tufted. Joints slightly swelling upward, with pellucid partitions. Branches forked. Capsules solitary, obovate, lateral.

FROM the beach at Brighthelmston, gathered there by Mr. W. Borrer early in July, with the fructification. We have received the same species, by favour of Mr. Gibbs, from Kingsbridge, Devon, and believe it is what Miss Hutchins found at Bantry bay, mentioned under *C. Hookeri* in Dillwyn; see his *t.* 106; though the two species, when properly examined, are totally dissimilar.—The present more resembles our *C. rosea*, *t.* 966, in general aspect and colour, varying however in being more or less pale occasionally, and is still more allied to *pedicellata*, *t.* 1817. From the latter, nevertheless, its much shorter joints, corymbose rounded figure, and sessile fruit distinguish it. From *rosea* it differs altogether in ramification, being dichotomous throughout, not alternately decomposite. The fruit indeed seems, as in that, rather lateral than axillary.

Published by J.C. Loudon, Esq.

# GALEOPSIS villosa.

## *Downy Hemp-Nettle.*

*DIDYNAMIA Gymnospermia.*

GEN. CHAR. *Cal.* 5-cleft, awned. Upper lip of the *corolla* notched, vaulted: lower with 2 teeth on its upper side.

SPEC. CHAR. Stem not swelled below the joints. Leaves ovato-lanceolate, serrated, villous. Upper lip of the corolla deeply notched.

SYN. Galeopsis villosa. *Huds.* 256. *Sm. Fl. Brit.* 629. *Hull. ed.* 2. 175. *Galp.* 50. *Dicks. H. Sicc. fasc.* 10. 15.

G. grandiflora. *With.* 528.

G. n. 267. *Hall. Hist. v.* 1. 117.

Betonica hirta. *Huds. ed.* 1. 220, but not of Linnæus.

Sideritis arvensis latifolia hirsuta lutea. *Raii Syn.* 242.

A NATIVE of sandy corn-fields, chiefly in Yorkshire and Lancashire, flowering in July and August. What Mr. Relhan mistook for it in the first edition of his *Fl. Cant.* appears by the second to be our *versicolor*, *t.* 667.

The root is annual and fibrous. Whole plant most like *G. Ladanum*, *t.* 884, but larger, rather paler, and more hoary. The leaves are more ovate than lanceolate, regularly serrated, clothed with dense soft down, especially underneath. Calyx villous, with straight pungent teeth. Corolla four times as long as the calyx, of an elegant pale sulphur colour; the palate deep yellow. The upper lip is strongly and sharply notched, and somewhat cloven.

# THLASPI perfoliatum.

## *Perfoliate Shepherd's Purse.*

*TETRADYNAMIA Siliculosa.*

GEN. CHAR. *Pouch* notched, inversely heart-shaped, with several seeds: valves boat-like, their keels forming the border: partition contrary to the valves.

SPEC. CHAR. Pouch exactly inversely heart-shaped. Stem-leaves heart-shaped, sharpish at the base, clasping the stem, which is branched. Style very short.

SYN. Thlaspi perfoliatum. *Linn. Sp. Pl.* 902. *Sm. Fl. Brit.* 685. *Huds. ed.* 1. 246. *With.* 569. *Hull. ed.* 2. 191. *Sibth.* 199. *Jacq. Austr. t.* 337.

T. alpestre. *Huds.* 282. *Dicks. H. Sicc. fasc.* 6. 5.

T. perfoliatum minus. *Raii Syn.* 305.

T. rotundifolium. *Ger. em.* 266.

WE know not that this species of *Thlaspi* has been observed any where in Britain, except in the limestone part of Oxfordshire, about Witney and Burford, where it is abundant in the spring, and from whence our specimen came.

The root is fibrous and annual. Stem branched from the very bottom, except on poor ground, usually from four to six inches high, spreading, roundish, smooth, leafy. Leaves glaucous, smooth, slightly toothed; the radical ones stalked, ovate, obtuse; the rest sessile, alternate, heartshaped, clasping the stem with their, more or less acute, base. Flowers white, small, in dense corymbose heads, gradually lengthened out into long clusters of seed-vessels, which are precisely obcordate, smooth, glaucous, their lobes extending far beyond the very short style. Stigma capitate. Seeds many in each cell. The petals are blunt and undivided. The calyx spreading, concave, purplish.

Drawn published by Jas Sowerby London

# CARDAMINE bellidifolia.

## *Daisy-leaved Ladies'-Smock.*

*TETRADYNAMIA Siliquosa.*

GEN. CHAR. *Pod* bursting elastically, the valves turning back, equal to the partition. *Stigma* entire. *Cal.* a little spreading. One *gland* on each side, between the shorter stamina and the calyx.

SPEC. CHAR. Leaves simple, ovate, entire, about one third the length of their footstalks.

SYN. Cardamine bellidifolia. *Linn. Sp. Pl.* 913. *Fl. Lapp. ed.* 2. 222. *t.* 9. *f.* 2. *Sm. Fl. Brit.* 697. *With.* 577. *Hull ed.* 2. 194. *Fl. Dan. t.* 20. *Jacq. Misc. v.* 1. 148. *t.* 17. *f.* 2.

DR. WITHERING is our only authority for considering this alpine plant as a native of Britain. He mentions having had wild specimens, gathered in Scotland, from Mr. Milne, formerly curator of the Oxford garden. We have never seen or heard of it from any of our British correspondents, but have gathered it on the alps of Savoy, where it grows about little rills in boggy ground, flowering at various periods during summer. We are therefore obliged to have recourse to exotic specimens, little changed by drying, and we can answer for the correctness of the annexed figure. As Lapland, Norway, Austria, and Switzerland produce this *Cardamine*, it might be expected to grow in Scotland. We have already mentioned, under *Arabis stricta*, *t.* 614, that it is not *C. pumila, bellidis folio, alpina* of Ray, or of Gerarde.

The root is perennial, rather woody. Stems several, an inch or two high, naked or leafy, smooth like every other part. Leaves ovate, entire, or slightly wavy; the radical ones numerous, on long stalks; the rest sometimes nearly sessile. Flowers corymbose, few, with white upright petals, twice the length of the calyx. Pod linear, obtuse, corrugated, destitute of hairs.

2356.

Pub. 1 mo published by J. Sowerby London

# GRIMMIA cirrata.

## *Frizzled Grimmia.*

*CRYPTOGAMIA Musci.*

GEN. CHAR. *Fringe* simple, of 16 teeth, broadest at their base. *Flowers* terminal. *Veil* cylindrical.

SPEC. CHAR. Leaves bristle-shaped, keeled, curled when dry. Capsule ovate, smooth, dilated and somewhat spreading at the mouth. Lid slender.

SYN. Grimmia cirrata. *Sm. Fl. Brit.* 1189.

Bryum cirratum. *Huds.* 485? *With.* 824. *Hull* 260. *Lightf.* 728?

Muscus muralis minimus roseus, sive stellaris, capitulis longiusculis acutis erectis. *Vaill. Paris. t.* 24. *f.* 8.

COMMUNICATED by Mr. Dickson, who assures us it is a native of high rocks; rather than of trees or heathy ground, as Mr. Hudson indicates; which circumstance, and his misapplication of synonyms, lead us to believe that this author, if he knew the present moss at all, confounded it with *G. Dicksoni*, *t.* 1420.

The two species are very much alike in habit, but the leaves of the *cirrata* are of a more yellowish green and much narrower. The essential distinction however resides in the capsule, which is shorter, ovate, with a wide mouth, very different from the peculiarly narrow orifice of *G. Dicksoni*. The fringe is injured in our specimens, being very brittle. Since the *Flora Britannica* was published, Mr. Dickson has favoured us with numerous young capsules, in which the lid is long and slender, nearly equal to the capsule itself. Dr. Abbot's *Bryum cirratum* proves to be *G. Dicksoni*.

Tab. 1 was published by Jas. Sowerby London.

# DICRANUM bipartitum.

*Twin-stalked Fork-moss.*

*CRYPTOGAMIA Musci.*

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem somewhat forked. Leaves ovate, revolute. Fruitstalks often in pairs. Capsule elliptical, striated, inclining. Lid conical.

SYN. Dicranum bipartitum. *Roth Germ. v.* 3. 158. *Sm. Fl. Brit.* 1218.

Bryum bipartitum. *Dicks. Crypt. fasc.* 2. 7. *With.* 835. *Hull.* 265.

B. parvum, surculis et setis geminatis. *Dill. Musc.* 385. *t.* 49. *f.* 50.

B. parvum trichoides ramosum, erectis capitulis subfuscis, in pediculis obscurè rubris. *Dill. in Raii Syn.* 96.

DILLENIUS observed this species on banks, walls, and in gardens, bearing fruit in the early spring. He, and Mr. Dickson who favoured us with specimens, are the only botanists whom we can find to have gathered this moss in Britain. Hoffmann and Roth enumerate it amongst the productions of Germany. It may very possibly have been, by many persons, overlooked for the common *D. purpureum*, from which it differs in being smaller, with broader, shorter, ovate, revolute leaves, less incurved by drying. The fruitstalks too are paler, often, but not invariably, standing two together, but scarcely, we believe, from the same sheath. An essential difference moreover may be detected in the capsule, which, though striated, is not, at any period of growth, deeply furrowed, nor is it quadrangular at the base. The fringe is pale, much damaged in our specimens.

2358

Date when published by Jas. Sowerby London.

# SPILOMA melanopum.

## *Broad Black Spiloma.*

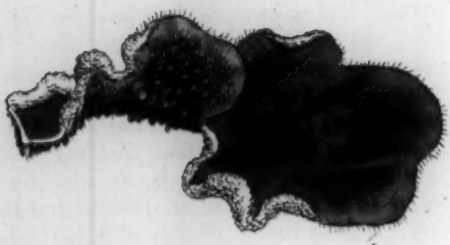
*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Receptacles* shapeless, without a border, hairy and powdery, in an uninterrupted crust.

SPEC. CHAR. Crust very thin, greyish. Receptacles flat, dilated, irregular, somewhat confluent, black.

SYN. Spiloma melanopum. *Sm. Fl. Brit. v.* 4. *ined.*
S. melanopa. *Ach. Meth.* 10. *t.* 1. *f.* 3.
Lichen rugosus. *Hoffm. Enum.* 10. *t.* 2. *f.* 5?

ON the smooth barks of trees; not uncommon on the apple-tree, according to Mr. W. Borrer, where it assumes the appearance of sooty spots. The crust is scarcely discernible, except in a young state, when it is greyish or ash-coloured and very thin, besprinkled with innumerable, little, round, powdery, black specks, or masses of seeds. These soon run together into broader irregular patches, as drawn by Acharius. We find a mixture of minute green granulations, which may either be adventitious portions of a *Lepraria*, or possibly the infant fructification of this *Spiloma*. There are also to be seen, in our specimen, a number of simple, curved, jointed threads, intermixed with the fructification; perhaps some nondescript *Conferva*. We do not wish to conceal our doubts nor our ignorance, but merely exhibit and describe what we have seen, for others to decide upon.—Hoffmann's *Lichen rugosus* agrees so nearly with this plant, that we see scarcely any room to doubt their being one and the same.



# LICHEN auratus.

## *Golden-edged Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

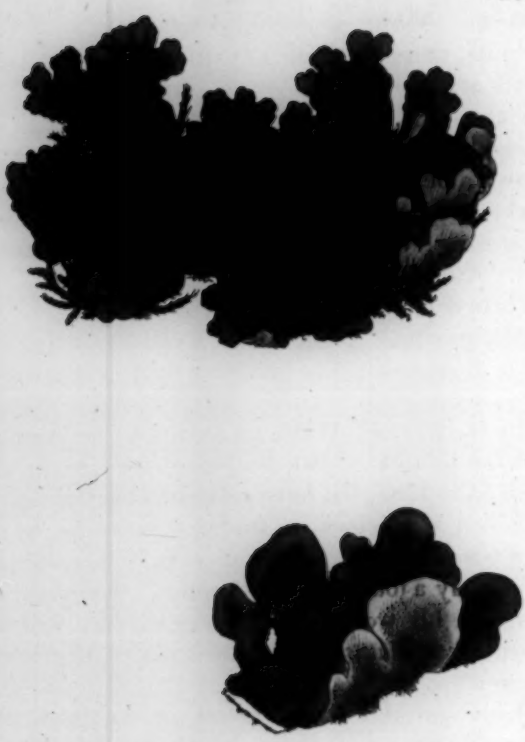
SPEC. CHAR. Somewhat coriaceous, ascending, sinuated, roundly lobed, nearly even, of a shining reddish glaucous light brown; the margin wavy, bearing golden-coloured powder; the dorsal pits bright yellow. Shields ....

SYN. Sticta aurata. *Ach. Meth.* 277.
Platisma crocatum. *Hoffm. Pl. Lich. v.* 2. 52. *t.* 38. *f.* 1—3.
Lichenoides lacunosum rutilum, marginibus flavis. *Dill. Musc.* 549. *t.* 84. *f.* 12.

PART of a specimen communicated by Mr. Lambert from the remains of Mr. Hudson's herbarium, to which we have alluded in *v.* 30. *p.* 2110. If British, of which we have no positive evidence, it was probably gathered in the woody part of Devonshire, which its collector often visited; and as Professor Acharius has mentioned this in his *Methodus*, where, on our authority, he first separated the present magnificent species from *crocatus*, *t.* 2110, we would not leave our work imperfect by omitting it. Some bits of *Neckera pumila*, *t.* 1443, attached to the specimen, indicate its growing on trees. The plant is known to be a native of St. Helena and the West Indies; nor dare we deny the possibility of Mr. Hudson's having put into his collection foreign specimens, as an exhibition of *crocatus*, known in his time to have been found in Scotland. Some Devonshire botanist must clear up these uncertainties.

The fronds are larger than in *crocatus*, and less pitted, smooth, destitute of powdery veins, of a bright glaucous reddish brown; the under side downy, blackish towards the middle, with small golden pits. The lobes are sinuated, rounded, crenate and wavy, with tumid, powdery, bright yellow or golden edges. No shields have been observed.

2360



# LICHEN parilis.

## *Chocolate Reversed Lichen.*

*CRYPTOGAMIA Algæ.*

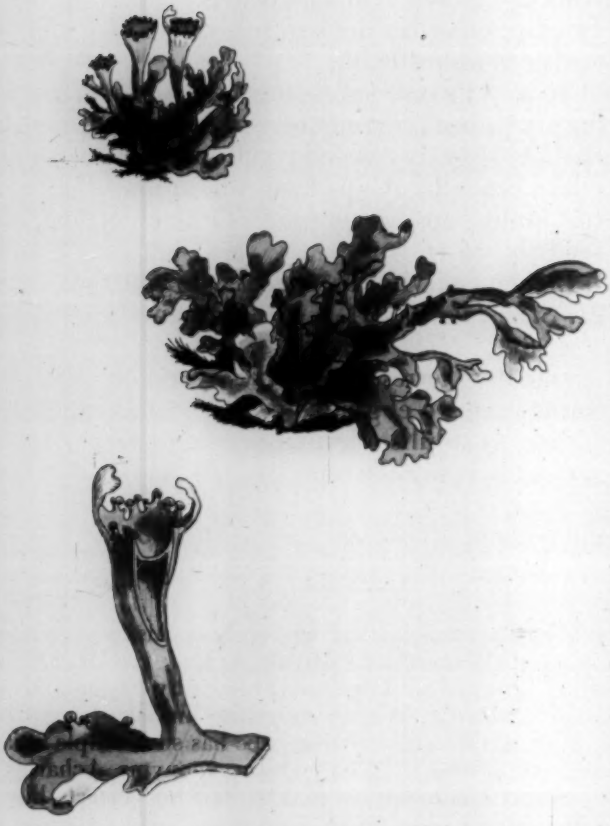
GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Somewhat coriaceous, creeping, lobed, jagged, crenate and wavy, greenish or purplish brown, besprinkled with superficial or marginal, dark, powdery warts. Shields red brown, broader than long, on the under side of the shorter lobes at their ends.

SYN. Lichen parilis. *Ach. Prodr.* 164.
Peltidea parilis. *Ach. Meth.* 289.

SENT by the Rev. E. Williams from an old stone-quarry in Shropshire in 1800. We discovered the same on the alps of Switzerland in 1787, but have never seen the shields. Having transmitted a specimen to Professor Acharius, to inquire whether it were his *L. parilis*, he answers, "it is undoubtedly so, and certainly a totally distinct species," though mentioned as doubtful in his works. "It dies wool blue, which is not the case with *resupinatus*, nor do their modes of growth, nor habits, agree."

The fronds spread on the ground, or on stones, in dank shady places, among moss, in a somewhat stellated form, and are of a dull brown, inclining to a chocolate colour when fresh. They are rather membranous than coriaceous, variously lobed sinuated and wavy, veinless and smooth, except where their surface, and especially their curly edges, are rough with abundant dark granulations. The under side is often wrinkled, scarcely downy. The shields are described by Acharius as "red brown, placed at the back of very short lobes, and transversely oblong," that is short and broad, not round as in *resupinatus*, *t.* 305.—Some of Mr. Williams's specimens were overrun with *L. brunneus*, *t.* 1246, which looked as if it were their proper fructification, so well did its granulated crust assimilate with the warts of our *parilis*.



Drawn & engraved on Stone by J.C. Sowerby Junr.

# LICHEN endivifolius.

## *Endive-leaved Cup Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Fronds spreading, leafy, cartilaginous, deeply lobed; segments forked and pinnatifid, flattish, slightly twisted; yellowish green above; white beneath. Cups from the upper side, small, turbinate, mostly simple. Tubercles marginal, reddish brown.

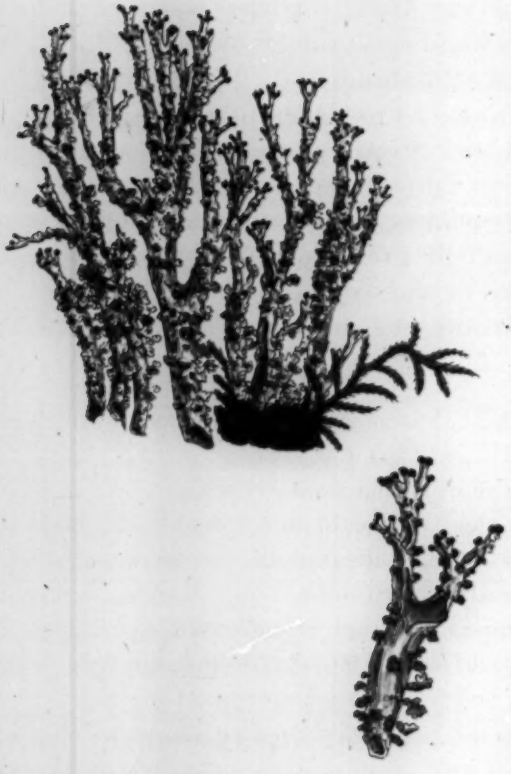
SYN. Lichen endivifolius. *Dicks. Crypt. fasc.* 3. 17. *H. Sicc. fasc.* 9. 24. *Ach. Prodr.* 195. *With. v.* 4. 60. *Hull.* 298.

L. pyxidatus terrestris, endiviæ crispæ folio, superne ex flavo et glauco subvirescens, inferne albidus, pyxidulis plerumque simplicibus, receptaculis florum rufescentibus. *Mich. Gen.* 82. *t.* 42. *f.* 3.

Bæomyces endivifolius. *Ach. Meth.* 351.

MICHELI records his having received this from London; yet it escaped the mention of British writers, till Mr. Dickson noticed it, growing on the ground, in heathy barren places in Surry and Scotland. We are obliged to him for specimens.

No other of this cup-bearing tribe has such ample foliage, not even *cæspititius*, *t.* 1796, whose synonyms Acharius in his *Prodromus* confounds with this; but he corrects himself in his *Methodus*. The fronds spread in broad patches, and are rendered conspicuous on black turfy soil by the bright yellowish green of their upper side, and the pure white of the back, which in dry weather is turned upwards; otherwise the segments are flat, or slightly twisted. Their form is nearly linear, deeply forked and pinnatifid, with wavy edges. From the upper surface spring the cups, very minute when young; but such as attain the greatest perfection are near an inch high, turbinate, with a more or less leafy margin, bearing small, reddish, almost sessile tubercles.



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# LICHEN sparassus.

## *Torn-coated Cup Lichen.*

*CRYPTOGAMIA Algæ.*

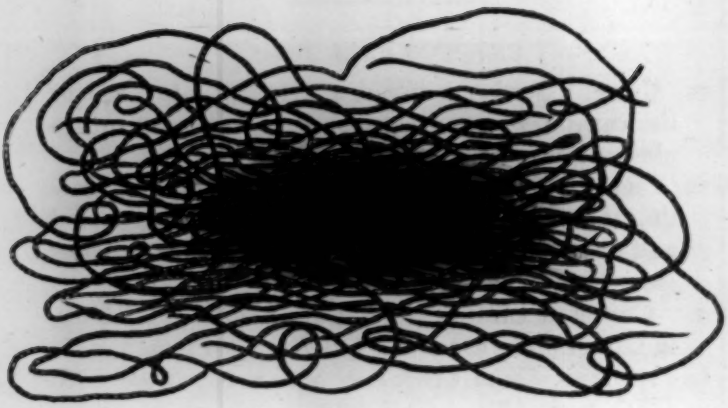
GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

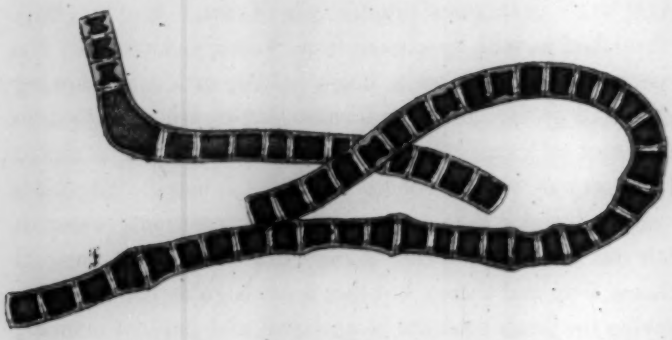
SPEC. CHAR. Fronds cartilaginous, minute, lobed and cut. Stems cylindrical, repeatedly branched, rigid, ash-coloured, rough with innumerable scaly leaflets. Cups minute, toothed, pervious, repeatedly proliferous from their margins. Tubercles clustered, brown.

SYN. Bæomyces sparassus. *Ach. Meth.* 346.

GATHERED in mossy woods at Hafod, Cardiganshire, in 1797. It is perhaps not uncommon in such places. Our specimens agree with some from Acharius.

The original foliage is minute and evanescent, lobed and cut, green above, white beneath, but the whole surface of the stems is nearly clothed with similar leaflets, having a scurfy or scaly appearance, and where naked seeming as if it had been plucked bare. The stems form large tufts, adhering to each other and to the surrounding moss or grass, so as to break when gathered, especially if tender from wet. They are about two inches high, tubular, thin, erect, repeatedly branched, rigid though brittle, cracked or perforated above the origin of every branch, and ending in very small, compound, irregular, toothed or forked cups, whose centre is also pervious. Innumerable little brown crowded tubercles terminate the points or teeth of the cups.—Acharius considers the *L. ventricosus* of Hudson, and of his own *Prodromus*, p. 189, Dill. t. 15. f. 17, as a variety of this. Indeed there seems to be but a shade of difference between them.





Published by J. & C. Brooks, London.

# CONFERVA Linum.

## *Marsh Thread Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green. Filaments simple, round, brittle, somewhat elastic and rigid, uneven, curled and entangled. Joints cylindrical, rather broader than long.

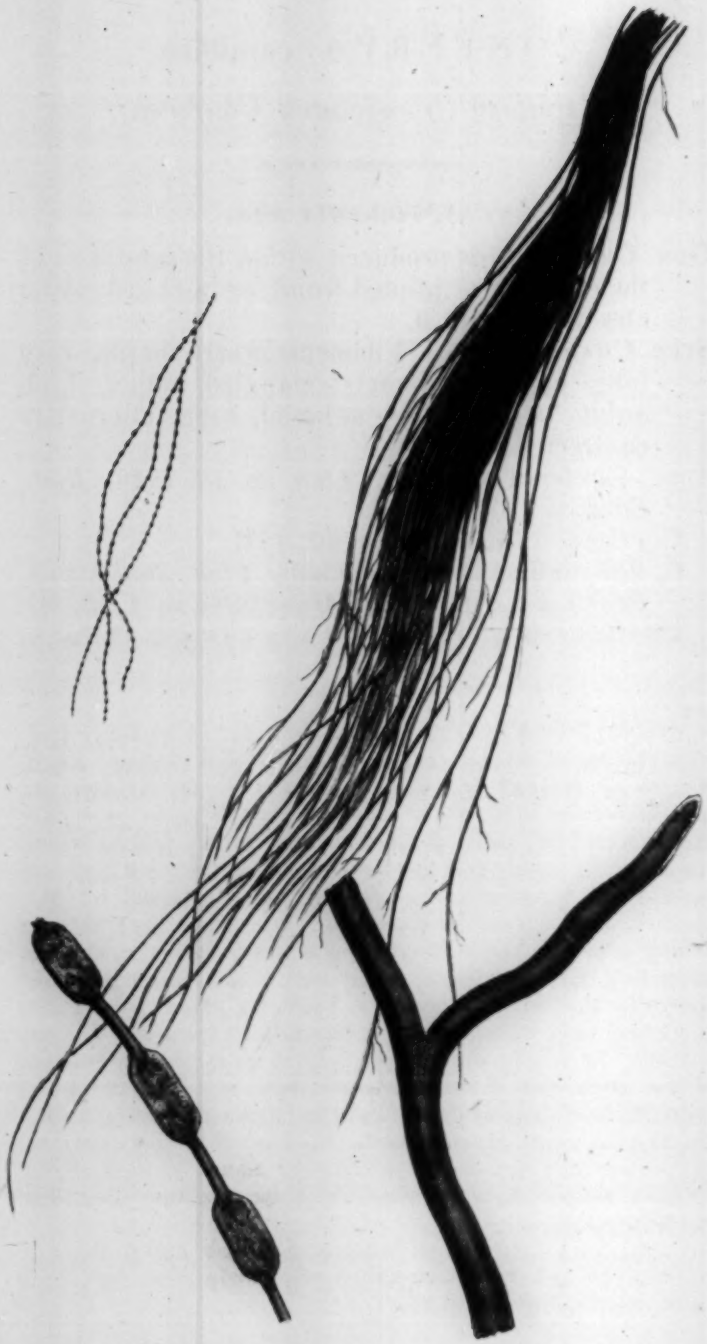
SYN. Conferva Linum. *Fl. Dan. t.* 771. *f.* 2. *Roth. in Ust. Annal. fasc.* 1. 5. *Catal. v.* 1. 174. *v.* 3. 257.

C. capillaris. *Dillw. Conf. t.* 9. *Syn. n.* 31. *Huds.* 598. *With. v.* 4. 135. *Hull.* 333.

C. filamentis longis, geniculatis, simplicibus. *Dill. Musc.* 25. *t.* 5. *f.* 25, A.

C. palustris, seu Filum marinum Anglicum. *Raii Syn.* 60.

COMMON in stagnant ditches near the sea. Mr. W. Borrer furnished us with specimens from Sussex in October. The filaments are as thick as a hog's bristle, or a coarse sewing thread, dull green, coiled and entangled together, so that no certain root or termination can be ascertained, yet so elastic and slippery as not to cohere into a dense mass. The joints are rather broader than long, with pale partitions, some of which are often prominent, giving the filament an unequal thickness here and there; but this is not regular nor constant. In drying the joints contract in an equal and parallel manner, and cannot be restored afterwards to their original appearance. This species does not adhere to paper or glass as it dries. Green globular bodies are sometimes found upon the threads, which soon fall off when the plant is taken out of the water, as in *C. dichotoma*, *t.* 932, and which have been taken for capsules, but, in our opinion, unjustly. What Mr. Dillwyn's minor variety, β, may be, we have not yet ascertained.



Jan.1 1796 Published by J.F. Dove, St. John's Square.

# CONFERVA capillaris.

## *Capillary Cross-jointed Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green. Filaments nearly simple, very long, capillary, loosely entangled, rather rigid. Joints twice as long as broad, even, alternately contracted when dry.

SYN. Conferva capillaris. *Linn. Sp. Pl.* 1636. *Roth. Catal. v.* 1. 175.

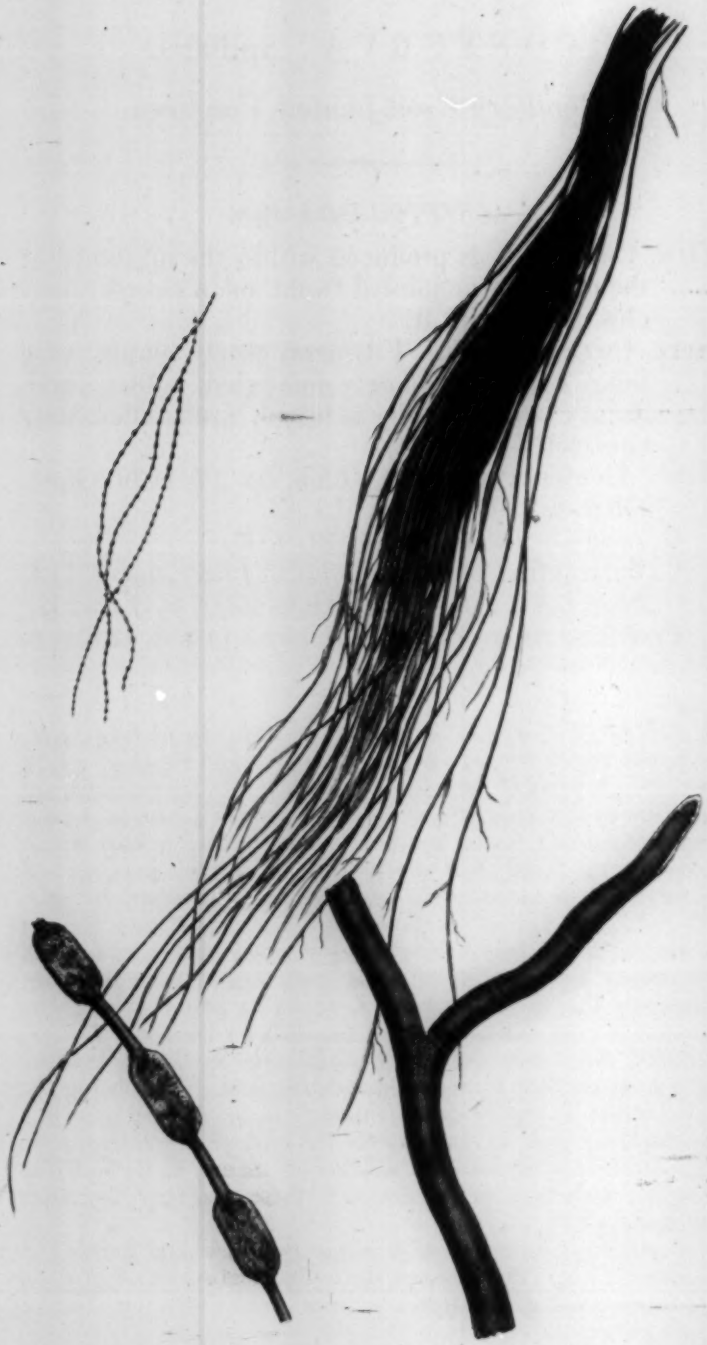
C. crispa. *Dillw. Syn. n.* 30. *t.* B.

C. fluitans filamentis geniculatis. *Pluk. Almag.* 113. *Phyt. t.* 84. *f.* 9. *Dill. Musc.* 26. *t.* 5. *f.* 25, B.

Prolifera crispa. *Vauch. Conf.* 130. *t.* 14. *f.* 2. Dillwyn.

COMMUNICATED by Mr. S. Wilkin, in October last, from the rapid rivulet between Norwich and Costesy, where Mr. W. J. Hooker first found this species. Its filaments are often many feet in length, of a dull or darkish green, as slender as a human hair, even, parallel to each other, at least where the stream is rapid, and almost entirely simple: yet here and there small branches are protruded, as discovered by Mr. Hooker, and figured in Dillwyn. The joints are full twice as long as broad, and no sooner begin to dry than they become alternately flattened, decussating each other, even more remarkably than in *C. crispata, t.* 2350, by which this species is clearly and abundantly distinguished from *C. Linum, t.* 2363; for it is no doubtful or ambiguous mark, but justifies all the stress that Linnæus has laid upon it. This being the indubitable *C. capillaris* of Linnæus, alone answering to his description, and agreeing with his authentic specimen, we cannot see any reason for altering its name, though all our English writers have confounded these two very dissimilar plants together.

*C. capillaris* when dried becomes roughish and brittle; if moistened it speedily resumes the cylindrical smooth figure, as justly observed by Dr. Roth.



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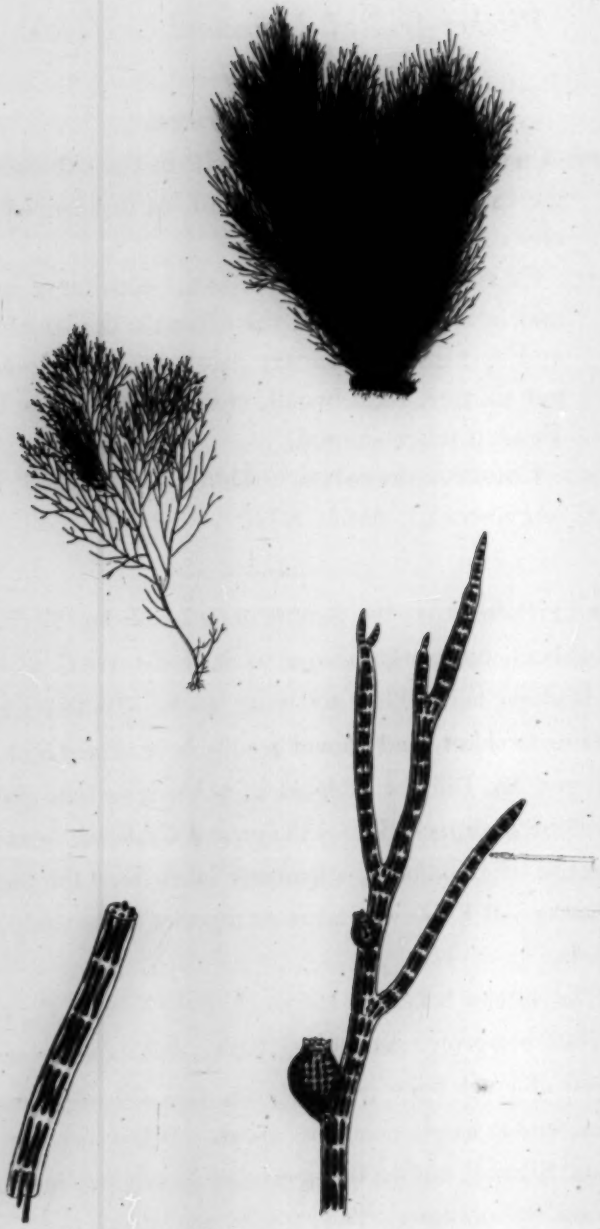

Published by J. Sowerby, London.

# CONFERVA urceolata.

## *Pitcher-fruited Compound Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Dark red brown, capillary, bushy, and much branched; the ultimate divisions short and spreading. Lower joints much longer, upper shorter, than broad, compound, of few tubes. Fruit pitcher-shaped.

SYN. Conferva urceolata. *Dillw. Syn. n.* 156. *t.* G.
C. nigrescens. *Huds.* 602?

GATHERED on the Scarborough beach by Sir Thomas Frankland, bart., who assures us it is the real *C. nigrescens* of Hudson, our *t.* 1717 not being such. To this we have nothing to object, and should readily have altered that name, had not Mr. Dillwyn adopted it, at the same time giving so excellent an appellation to the present *Conferva*, from a manuscript of Lightfoot's, apparently taken from the papers of Solander and Ellis, who laboured together in the study of sea plants.

The species before us has much of the habit of *C. fucoides*, *t.* 1743, being very slender and bushy, but its joints are composed of much fewer parallel tubes, and the lower ones are considerably longer than the upper. When dry the whole plant is black, but we find it recover its original deep reddish brown by moisture. The capsules are lateral, small, sessile, finely dotted, globular with a sort of neck, like a pitcher.

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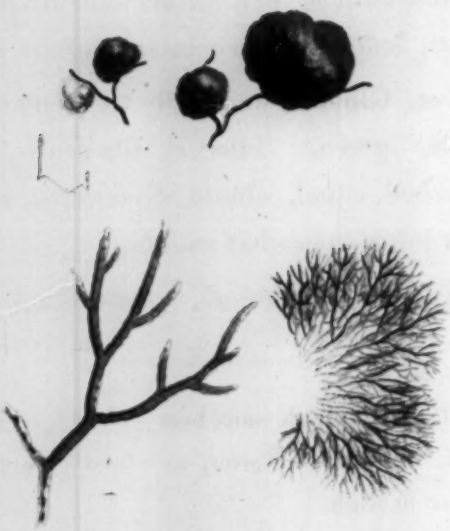


# RIVULARIA tuberculosa.

*Tubercular Rivularia.*

*CRYPTOGAMIA Algæ.*

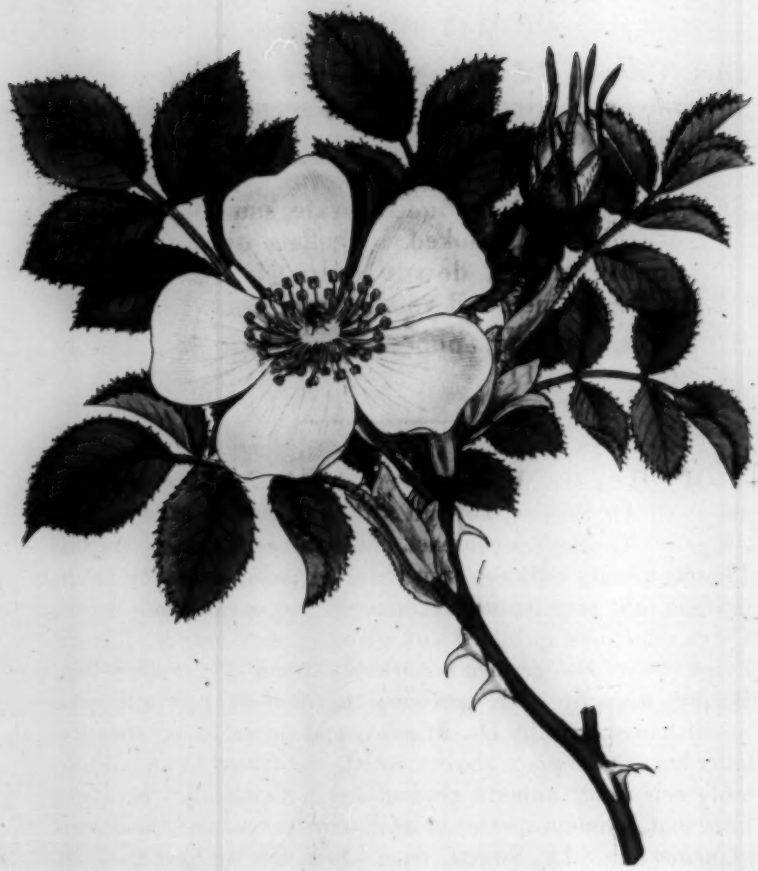
GEN. CHAR. *Frond* gelatinous, firm, destitute of an external cuticle. *Fructification* among jointed filaments, lodged in the substance of the frond.

SPEC. CHAR. Globose, unequally tubercular, concave, sessile, green. Internal filaments repeatedly branched, equal, obtuse, divaricated, entangled; their joints somewhat swelling.

SYN. Rivularia tuberculosa. *Roth. Catal. v.* 3. 341.

COLLECTED in fresh water near Henfield, Sussex, in September last, by Mr. W. Borrer, to whom we are obliged for the reference to Roth.

This is allied to the species figured in our 14th vol. *t.* 968, under the name of *Ulva pruniformis* given by Linnæus, but it is a true *Rivularia*. See *v.* 25. *t.* 1797. The present appears to differ from that in its tuberculated surface, caused by the clustering mode of growth of the internal, much branched and divaricated, filaments. It is a larger plant than *R. elegans*, *t.* 1797, and hollow, though filled with watery pulp, within.



Jas. Sowerby published by Jas. Sowerby London

# ROSA cæsia.

## *Glaucous-leaved Rose.*

*ICOSANDRIA Polygynia.*

GEN. CHAR. *Cal.* urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Petals* 5. *Seeds* numerous, bristly, fixed to the inside of the calyx.

SPEC. CHAR. Fruit roundish-ovate, smooth. Prickles of the stem hooked. Leaflets ovate, pointed, doubly serrated, downy; very glaucous, as well as the germen and young branches.

SYN. Rosa canina, pubescens. *Afzel. in Ann. of Bot. v.* 2. 211.

FOUND by Mr. W. Borrer in the highland valleys of Perthshire and Argyleshire, covered with a profusion of flowers in July. "The bush is compact, not so tall as *R. canina*, *t.* 992. Flowers usually solitary, sometimes in pairs, generally of an uniform, but very beautiful, carnation hue, occasionally white. Calyx sometimes sprinkled with glands, sometimes not. Young twigs, leaves and germen remarkably cæsious." Such is Mr. Borrer's account. His specimens agree most precisely with Swedish ones, sent by Dr. Afzelius, and prove to be what the latter has, in the place above quoted, mentioned as an indubitably new *Rosa*, hitherto confounded with *canina*. It differs from that common species in its downy leaves, and their very glaucous hue. Dr. Swartz, from whom also we have Swedish specimens, observes that the figure of the fruit varies from oblong to nearly globose, or to obovate. Our generally very accurate friend Afzelius seems to have made one mistake in his account; for in all the specimens we have seen, the flowers are most clustered in *canina*, being in the present species almost always solitary, rarely even in pairs, so that in this point he seems to have accidentally spoken of the one for the other.

# HIERACIUM Auricula.

## *Orange Mouse-ear Hawkweed.*

*SYNGENESIA Polygamia-æqualis.*

GEN. CHAR. *Recept.* nearly naked, dotted. *Cal.* imbricated, ovate. *Down* simple, sessile.

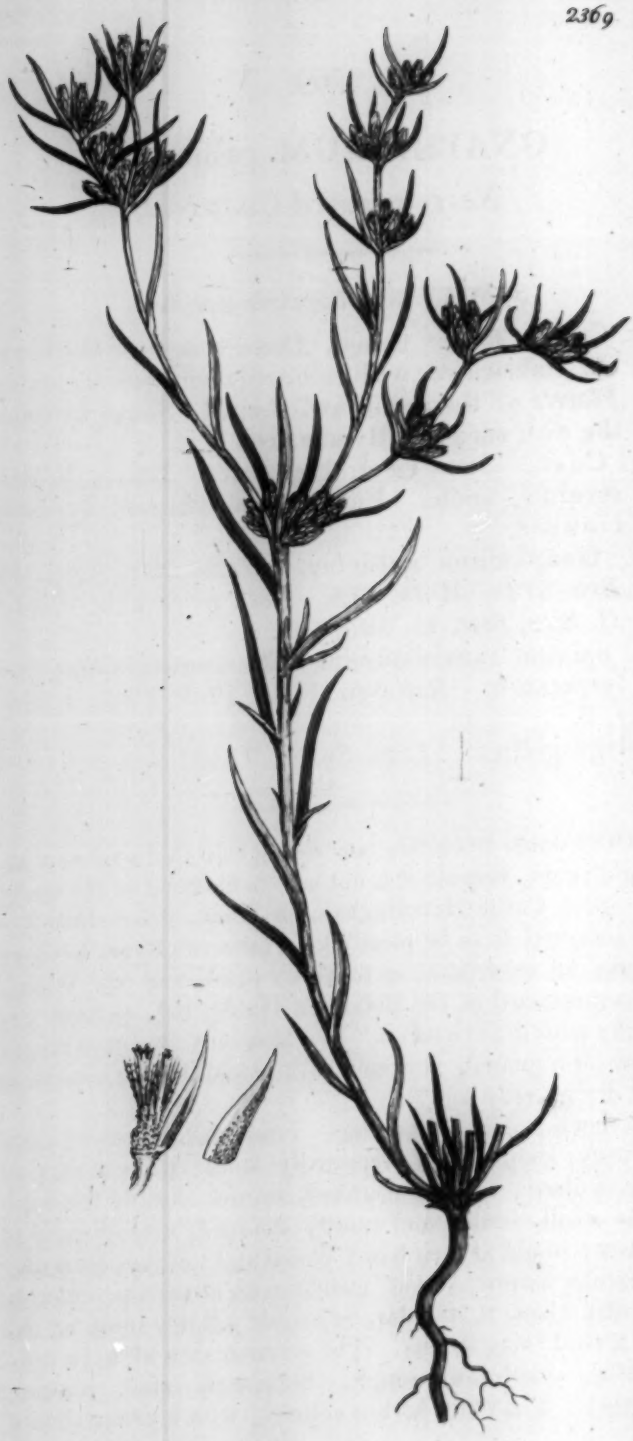
SPEC. CHAR. Leaves lanceolate, nearly entire, besprinkled with long hairs. Scions short. Stalk hairy, bearing several close-set flowers.

SYN. Hieracium Auricula. *Linn. Sp. Pl.* 1126. *Sm. Fl. Brit.* 829. *Tr. of Linn. Soc. v.* 9. 230. *Huds.* 344? *With.* 684? *Hull. ed.* 2. 231?

H. dubium. *Fl. Dan. t.* 1044.

To render our illustration of the British Flora as complete as possible, we judge it indispensable to give a figure of this little-known species, though we can do it from dried exotic specimens only; but having gathered them fresh on Mount Cenis, we can vouch for the accuracy of the plate in every point. We doubt very much whether this *Hieracium* has a right to a place in the British list, but our figure, being kept in view, will serve, in due time, to settle that question. What Hudson gathered on Dalehead, Westmoreland, cannot be ascertained but by a scrupulous investigation of the spot, and a comparison between our present plate and *t.* 2332.

This species differs sufficiently from *dubium* in having lanceolate acute leaves, green on both sides; a very hairy stalk, bearing from 2 to 3, 4, or even 5, close-set, often umbellate flowers, rather smaller than those of *dubium*, and of a full yellow inclining to orange. The calyx is black. Long tawny hairs are scattered more or less abundantly over every part of the herbage. The root is perennial, creeping, but not extensively, with long strong fibres. The scions are few and short. In a garden they might prove more luxuriant, and the habit of the whole plant more lax.



James as published by Jas. Sowerby London

# GNAPHALIUM gallicum.

## *Narrow-leaved Cudweed.*

*SYNGENESIA Polygamia-superflua.*

GEN. CHAR. *Recept.* naked. *Down* rough or feathery. *Cal.* imbricated; with coloured membranous scales. *Florets* of the radius awl-shaped. Some *florets* of the disk occasionally abortive.

SPEC. CHAR. Stem erect, branched. Leaves linear, revolute, acute. Flowers awl-shaped, axillary, crowded.

SYN. Gnaphalium gallicum. *Huds.* 361. *Sm. Fl. Brit.* 872. *With.* 715. *Hull. ed.* 2. 239. *Dicks. H. Sicc, fasc.* 11. 10.

G. parvum ramosissimum, foliis angustissimis, polyspermon. *Raii Syn.* 181. *Pluk. Phyt. t.* 298. *f.* 2.

Filago gallica. *Linn. Sp. Pl.* 1312.

MUCH doubt has arisen concerning this Cudweed as a native of Britain, because it is not now to be found in the sandy fields about Castle Heveningham in Essex, where Dale formerly observed it to be plentiful. Plukenet's figure however precludes all uncertainty as to Dale's plant, and Mr. Woodward is mentioned in the Botanist's Guide, 191, to have noticed the same in Derbyshire. We have only seen garden specimens. It is annual, flowering in July and August, and likes a poor dry gravelly soil.

The root is small and tapering. Stems one or more, a span high, leafy, simple below, repeatedly branched in a corymbose form above. Leaves scattered, narrow, slightly revolute. Flowers small, sessile, and mostly crowded, among some of the leaves; tumid at their base; closed and tapering upwards. Calyx-scales narrow, keeled, membranous at the tip. Florets of the disk about 3, tubular, brownish yellow; those of the radius several, very slender. The germens seem all to be usually fertile. Seed-down rough. Receptacle small, convex, granulated. The whole herb is cottony, with a pretty silvery aspect.

Jan.1.1829 published by Jas Sowerby London

# ANTHEMIS maritima.

## *Sea Chamomile.*

*SYNGENESIA Polygamia-superflua.*

GEN. CHAR. *Recept.* chaffy. *Seeds* scarcely bordered. *Cal.* hemispherical, nearly equal. *Florets* of the radius more than five, oblong.

SPEC. CHAR. Leaves doubly pinnatifid, acute, fleshy, somewhat hairy. Stem prostrate. Calyx slightly downy.

SYN. Anthemis maritima. *Linn. Sp. Pl.* 1259. *Sm. Fl. Brit.* 904. *Huds.* 374. *With.* 740. *Hull. ed.* 2. 246. *Phelps Calend.* 136.

Chamæmelum maritimum latifolium ramosissimum, flore albo. *Dill. in Raii Syn.* 186.

A NATIVE of the sea shore in rocky or stony places, but of rare occurrence. Mr. Robson favoured us with a wild specimen from Sunderland, Durham, and our figure has been assisted by one from a garden. The plant is annual, flowering in July.

The stems grow prostrate, in a circular position, and are from 6 to 12 inches long, angular, leafy, hoary, sometimes purplish; branched and bearing several flowers. Leaves sessile, alternate, fleshy, most hairy beneath, cut into many sharp pinnatifid segments, flat on the upper side. Flowers solitary, on terminal, downy, swelling stalks. Calyx hemispherical, its scales torn and almost feathery, invested with a few fine hairs. Disk flat, yellow, the sharp chaffy scales of the receptacle rising above the unopened florets; radius of many white, spreading, slightly toothed, oblong florets. Seeds crowned with a narrow entire border. The flowers smell like Tansy, the leaves like Mugwort. The scales of the receptacle distinguish it at once from *Pyrethrum maritimum*, *t.* 979, not to mention the hoariness of the herbage.

Jan 1 1817 published by J.E. Smith & Sowerby London

# BRYUM interruptum.

*Interrupted Thread-moss.*

*CRYPTOGAMIA Musci.*

GEN. CHAR. *Outer fringe* of 16 teeth, broadest at the base; *inner* a toothed membrane. *Flowers* terminal. *Capsule* ovate-oblong, smooth. *Veil* smooth.

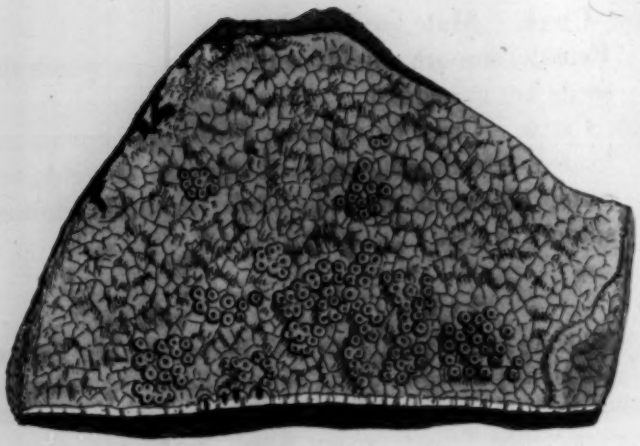
SPEC. CHAR. Stem branched, interruptedly leafy. Leaves lanceolate, acute, finely serrated throughout. Capsule pear-shaped, nearly erect.

SYN. Bryum interruptum. *Dicks. Crypt. fasc.* 4. 13. *t.* 11. *f.* 6. *Sm. Fl. Brit.* 1363.

FOUND on the alpine rocks of Scotland by Mr. Dickson, who bestowed on us a specimen, here delineated, from Ben Nevis. We have borrowed from the original sketch, made for his plate, what more decidedly shows the interrupted foliation of this species.

The perennial stems constitute dense tufts, an inch or two high, and are determinately branched, interruptedly leafy, red in the naked parts. Leaves clustered, bright green or yellowish, shining, reticulated, lanceolate, acute, with a mid-rib, equally and finely serrated; the lower ones more distant, small and short. Fruitstalk erect, red, hardly an inch high, terminal in its origin, though surmounted by branches. Capsule nearly erect, brown, pear-shaped, with a rather wide mouth, obscurely reticulated. Lid hemispherical, with a blunt point.

2372



James Sowerby published by J. Sowerby London

# LICHEN ceuthocarpus.

*Tumid dot Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

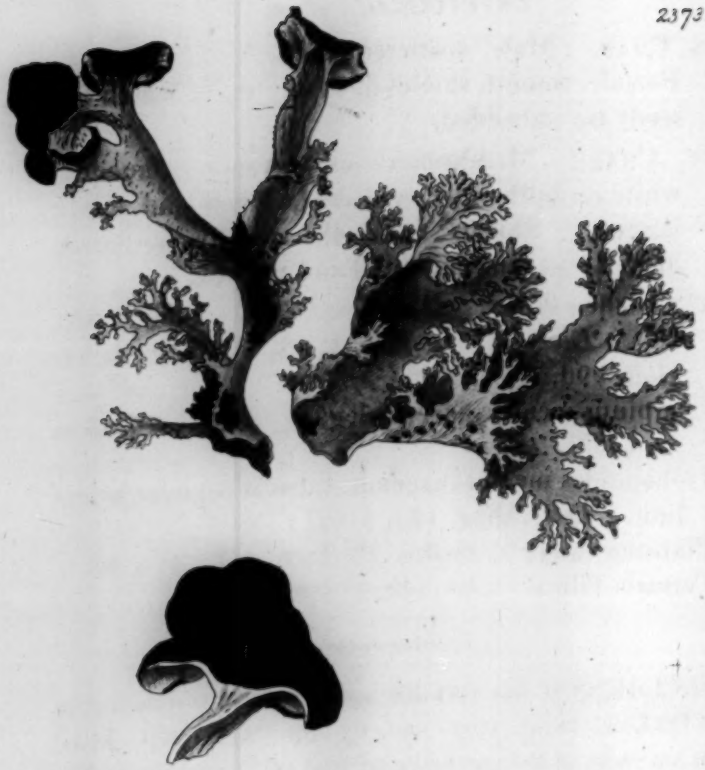
SPEC. CHAR. Crust calcareous, continued, cream-coloured, tessellated, unequal, smooth. Shields minute, black, depressed, sunk in tumid globose smooth warts.

FOR this we are obliged to Mr. W. Borrer and Mr. Turner, who both at first thought it the *Sagedia lævata* of Acharius, so called in his new general work on Lichens, not yet come to our hands. Mr. Turner having found this to be a mistake, informs us the plant will be called *Pertusaria ceuthocarpa*, in Mr. Borrer's own *Lichenographia Britannica*, now in the press. Of the characters of these genera we are as yet ignorant, but, as a species, the plant before us is unquestionably distinct from all we have published. Sir Thomas Gage, bart., as well as Miss Hutchins, have found it in Ireland, growing, in large uninterrupted patches, on slate rocks.

The crust is continued, of a tolerably even thickness, white and chalky within, externally cream-coloured, tessellated, smooth and not at all mealy. The surface is rather unequal, especially the fructifying parts, where globose, depressed, very smooth warts arise, in the centre of each of which is a little black sunk concave shield, internally pale brown. We should have referred this species to the genus *Urceolaria* of Acharius, among those already proposed. We fear much inconvenience from the common error of making too many genera in this tribe, as in others.

Mr. Borrer observes little black tubercles scattered over the surface of this *Lichen*, like those of *L. microsticticus*, *t.* 2243.

2373.



Jan. 1.1823. published by Sir. Curtis, London.

# LICHEN fallax.

## *Fallacious Leafy Lichen.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranaceous, smooth, glaucous-white on both sides, polished, lobed and finely jagged. Shields terminal, slightly bordered, brown; at length dilated and convex.

SYN. Lichen fallax. *Web. Goett.* 244. *Ach. Prodr.* 169. *Dicks. Crypt. fasc.* 1. 13. *With. v.* 4. 53. *Hull.* 296.

L. alpinus membranaceus elegans, &c. *Mich. Gen.* 75. *t.* 37.

Lichenoides membranaceum, tubæ fallopianæ æmulum. *Dill. Musc.* 165. *t.* 22. *f.* 58.

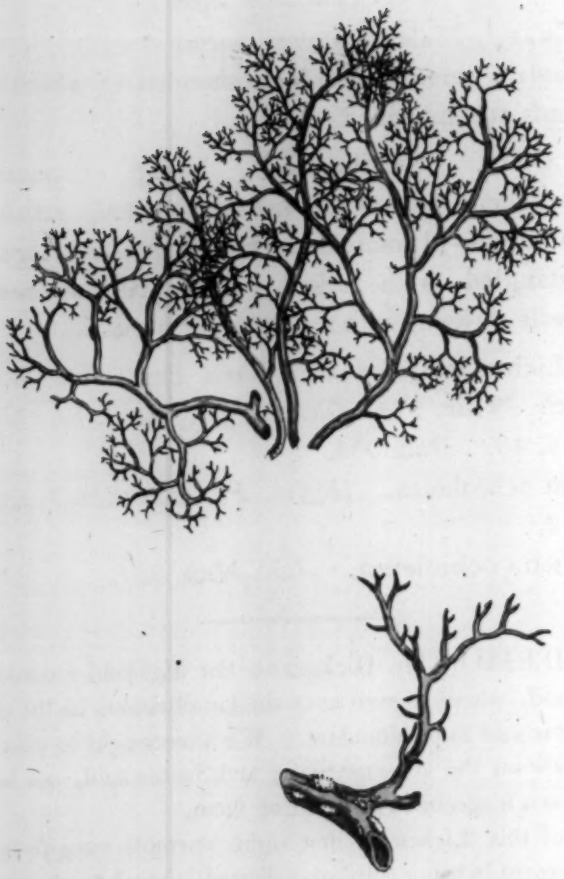
Platisma fallax. *Hoffm. Pl. Lich. v.* 2. 71. *t.* 46.

Cetraria fallax. *Ach. Meth.* 296.

SPECIMENS of this very fine and rare Lichen were sent to Mr. Dickson, many years ago, by Mr. Slater, who found them on rocks in the mountainous part of Devonshire. Not having been able to procure or even to see any of British growth, we are obliged to rely, as we safely may, on such authority, and to figure one given us by Prof. Gouan of Montpellier.

The present species is most allied to *glaucus*, *t.* 1606, from which it differs in its more ample and diffuse form of growth, more elegant and fringed divisions, large terminal dark-brown shields, growing on elongated dilated segments of the frond, and especially in its paler colour, which is, on the under side, almost white, not brown or black.

2374



Jan.1.1821 published by Jas. Sowerby London.

# LICHEN ochroleucus.

## *Shrubby Sulphureous Lichen.*

*CRYPTOGAMIA Algæ.*

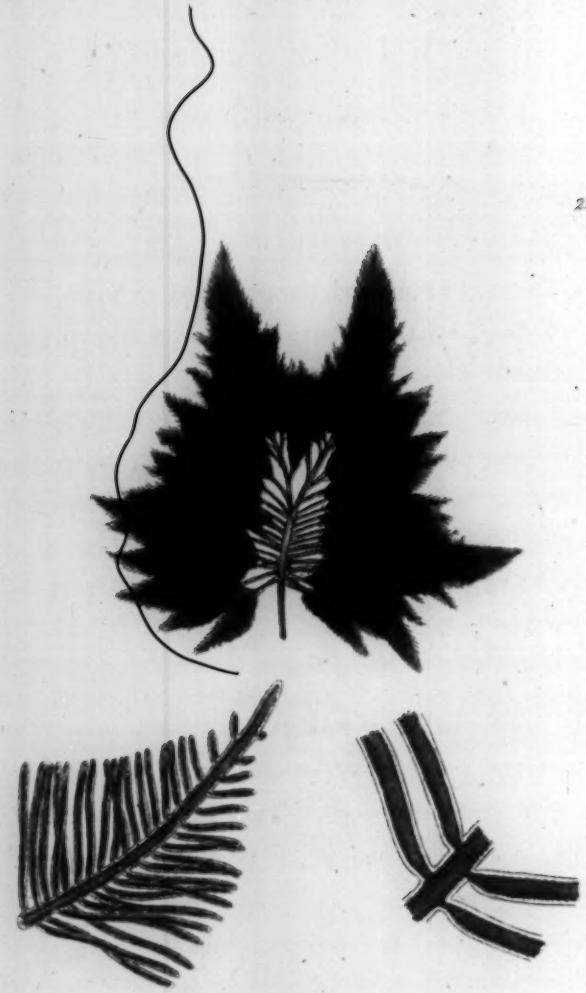
GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cartilaginous, bushy, repeatedly branched, somewhat tubular, pitted, sulphur-coloured; ultimate branches divaricated, zigzag, entangled, with forked points. Shields nearly sessile, brown, with a pale wavy border.

SYN. Lichen ochroleucus. *Ehrh. Beitr. fasc.* 3. 82. *Ach. Prodr.* 215. *Dicks. Crypt. fasc.* 3. 19. *With. v.* 4. 46. *Hull.* 306.
Usnea ochroleuca. *Hoffm. Pl. Lich. v.* 2. 7. *t.* 26. *f.* 2.
Parmelia ochroleuca. *Ach. Meth.* 271.

GATHERED by Mr. Dickson on the highland mountains of Scotland, where, as well as in similar situations on the continent, it is said to be abundant. We have sought in vain for the shields on the Alps of Savoy and Switzerland, nor have we ever seen a specimen or figure of them.

Tufts of this Lichen at first sight resemble *rangiferinus*, *t.* 173, except in being sulphur-coloured, not white, but it is most akin to *sarmentosus*, *t.* 2040. The stems are rigid and hard when dry, softer when moist, always sulphur-coloured, but their little forked spinous tips are black. The surface is somewhat pitted, occasionally warty or mealy; the inside hollow, but the coat is very thick. This species always grows on the ground, on exposed mountainous heaths.



# ULVA plumosa.

## *Feathered Laver.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Frond* membranous or gelatinous. *Seeds* solitary, scattered throughout its substance, under the cuticle.

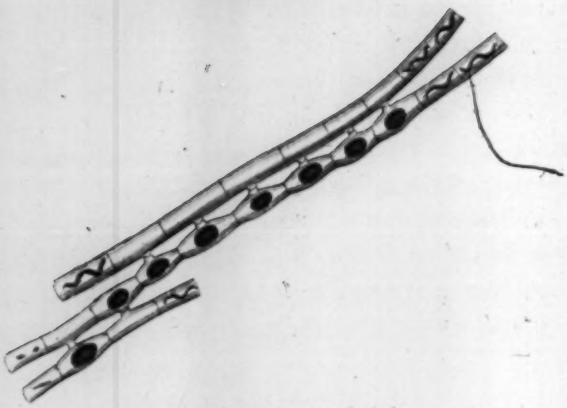
SPEC. CHAR. Frond gelatinous, green, thread-shaped, somewhat compressed, branched; branches pinnate, with numerous, parallel, linear, shining segments.

SYN. Ulva plumosa. *Huds.* 571. *With. v.* 4. 126. *Hull.* 313.

HUDSON discovered this elegant plant on submarine rocks and stones on the Devonshire coast. Mr. Woodward found it in little rocky pools, filled daily by the tide, at Cromer; and Mr. W. Borrer gathered our specimens at Brighthelmstone in September last.

The whole frond is but two or three inches high. At first gathering, its hue is a bright uniform green, but the colouring matter soon subsides, or rather collects towards the skin, leaving the central part vacant and pellucid. Several principal branches are sent off by the main stem, and these are elegantly pinnated, with thick-set linear segments, or leaflets, in their upper part, the lower being simple and naked, like the quill of the beautiful feather they thus compose. Nothing is distinctly known of the fructification.

2376.



Tab. 1 a published by Jas. Sowerby Lond.

## CONFERVA inflata.

*Inflated Combined Conferva.*

*CRYPTOGAMIA Algæ.*

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green. Filaments unbranched. Joints twice as long as broad, becoming swollen, and laterally conjugated. Grains in simple spiral lines.

SYN. Conjugata inflata. *Vaucher Conf.* 68. *t.* 5. *f.* 3.

TO correct our error at v. 24. p. 1670, pointed out by Mr. W. Borrer, we now publish what seems really to be the *Conjugata inflata* of Vaucher, found by our friend in boggy pools on Henfield Common, Sussex, last August. The species in *t.* 1670 excited some doubt, having never been found laterally conjugated, even in an advanced state, and we are now convinced of its belonging to a different tribe.

The present floats in dense light-green masses, and its filaments are very slender, simple, composed of joints at first cylindrical, and about twice as long as broad, or rather more, in each of which is a spiral green line. Afterwards the joints become tumid or elliptical, and unite by lateral tubes with those of neighbouring filaments, while the green matter within forms a ball, or rather constitutes an oval seed, according to Vaucher, much as in *C. nitida*, *t.* 2337.

To *tab.* 1670 may now be applied the name of

## CONFERVA tumidula.

*Tumid-jointed Conferva.*

The synonym, of course, must be erased.

G.R.
III